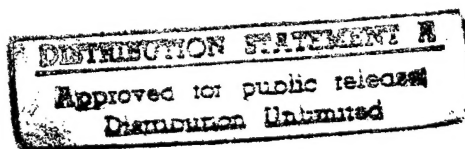




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# ***JPRS Report***

# **Environmental Issues**



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# Environmental Issues

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## ETHIOPIA

### Foreign Ministry 'Seriously Concerned' Over Somali Dumping

EA1809200692 Addis Ababa Voice of Ethiopia  
in English to Neighboring Countries 1530 GMT  
18 Sep 92

[Excerpt] A spokesman of the Ministry of Foreign Affairs of the Transitional Government of Ethiopia has been seriously concerned with the recent events in Somalia pertaining to toxic dumping by some European business enterprises which have callously disregarded the lives of the Somali people.

The spokesman reiterated the concern of the Transitional Government over the situation, referring to a recent disclosure by the UN Environment Program of over a million tonnes of waste already disposed around Mogadishu and several millions tonnes were expected to be dumped into the country thus exposing the greatest single environmental threat not only to Somalia but also to countries of the region, including Ethiopia. In the view of this fact, this disturbing situation also affects the peoples of Ethiopia as well as that of other neighboring countries.

The spokesman disclosed that the Transitional Government has called upon all countries of the region, in particular, and the international community, in general, to exert concerned and coordinated efforts to put an end to the abominable crime being perpetuated by [as heard] the people of Somalia by those who believe they can take advantage of the lack of civil order in the governance of the country. [passage omitted]

## KENYA

### President Moi Condemns Toxic Waste Dumping in Somalia

EA1209203092 Nairobi KTN Television in English  
1600 GMT 12 Sep 92

[Excerpts] President Daniel arap Moi today condemned the dumping of toxic waste in Somalia, saying it threatened human life not only in that country but also in neighboring Kenya. The president said it was a pity that the dumping was sanctioned by leaders in that country.

Questioning the rationale behind such a dangerous undertaking, the president observed that poverty was driving Africans to compromising their own dignity in order to survive. He was addressing a goodwill delegation of teachers and leaders from Bondo and Rarienda constituencies of Siaya District [west Kenya] at State House, Nakuru. [passage omitted]

President Moi said he was committed to ensuring that Kenya rode out the current political storm unscathed. However, the president said it was upon all Kenyans to either unite or perish.

## MAURITIUS

### New Environment Minister Discusses Future Plans

92WN0753A Port Louis LE MAURICIEN in French  
7 Jul 92 p 4

[Article by Marc Atchiane]

[Text] After he was appointed on Wednesday, Minister of Environment Khodabux devoted the entire morning of his first day in office yesterday to an evaluation of the situation in the environmental sector that is now the center of his concerns. He made the evaluation by bringing together the entire staff of his ministry.

Following the meeting, Khodabux met with LE MAURICIEN, which questioned him about his plan for attacking the problem.

If there is a problem, the minister conceded that the foundations have already been laid in Mauritius to protect us from the threat facing the industrialized world in terms of the degradation of the environment.

The economic boom that brought about the rapid industrialization of the country should have placed Mauritius in the red zone, but we have fortunately taken the measures needed to prevent the worst from occurring.

The Environmental Protection Act came just in time and thanks to this law, Khodabux said, it has been possible to reconcile development with the environment by a rational use of the law.

The minister did note, however, that there is a problem with waste. We have modernized the system of dumps in the local communities, but the government intends to set up land fields [sic] to eliminate waste, the volume of which is steadily rising. Two sites have been identified: one at Mare d'Australia and the other at Mare Chicose. The new principle consists in avoiding surface dumping.

The ministry's other concern is to guarantee that the Mauritians' standard of living will improve. The minister said the budget drafted for the purpose will be used judiciously through equitable sharing in all districts of the country.

Protection of our environment can never be completely possible without the cooperation of everyone. This is why, Khodabux says, the ministry will continue its campaign to make the Mauritian people aware of all aspects of the problem of the environment. Furthermore, when it is necessary to apply the law, the ministry will not hesitate to do so in order to make sure that an industrialized Mauritius will be forever protected from the damage caused by the degradation of nature.

## SOMALIA

**President Denies Government Involvement in Toxic Waste Issue***EA0909191092 Mogadishu Voice of the Somali Republic in Somali 1400 GMT 9 Sep 92*

[Excerpt] The president of the Somali Republic, Mr. Ali Mahdi Mohamed, has said that the interim government has never entered into any agreement with any company or been involved in any way in the dumping of toxic waste in Somalia. He has also said that Nur Elmi Osman is no longer a Cabinet member but rather a fugitive.

The president—in response to a report carried by the BBC on 8 September, which said the dumping of the toxic waste was being carried out with the full knowledge of Ali Mahdi—said he neither knows of, nor has any connection with, toxic-waste dumping.

The president said that a committee has been set up to investigate the matter and has appealed to Greenpeace organizations [plural as heard] to help investigate the alleged dumping.

He appealed to the Italian Government to extradite fugitive Nur Elmi Osman and others who had committed crimes against the nation. He also called on the United Nations to help Somalia guard its coast against the dumping of dangerous waste and assist it in preserving its environment. [passage omitted]

**UNEP Begins Talks To Stop Toxic Chemical Dumping in Somalia***AB1109122592 Paris AFP in English 2226 GMT 9 Sep 92*

[Text] Nairobi, Sep 9 (AFP)—The United Nations Environment Programme (UNEP) has opened talks with various governments in a bid to stop firms from their countries from going ahead with plans to dump toxic chemicals in Somalia, a UNEP statement announced here Wednesday. The statement also announced that after further consultations with the United Nations Security Coordinator in Mogadishu, arrangements were being made for an urgent mission to Somalia by UNEP on the issue.

The statement said that according to information reaching its office here, a number of European firms were believed to be involved in planned dumping of toxic chemicals and hazardous wastes in Somalia. It said Italian and Swiss firms trading in hazardous waste had entered into a contract with an individual, named Dr. Noor Elmy Osman, who describes himself as Minister of Health in the Republic of Somalia. The contract, the statement said, allows for the export of various types of waste to Somalia for 20 years between 1991 to 2011, with a contract value believed to be in the order of 80 million U.S. dollars.

Shipments, each of 100,000 tonnes, were to have yielded a profit of 10 million U.S. dollars each, and the Swiss firm involved in the transaction was to take a profit of between two and three million U.S. dollars per shipment, the UNEP statement said.

It pointed out that a Swiss firm was reported to be engaged in building two ship-board incinerators which would be used for the incineration of early waste consignments.

Although there is no firm evidence that shipments have actually been made, the statement said, there were unconfirmed allegations that waste consignments have already been dumped along the Somali coast.

In a separate incident, the statement said, 81,200 litres of toxic chemicals have already been spilled in Somalia and are threatening to pollute scarce drinking water supplies in the north of the country. The chemicals were stored in a pesticide warehouse which came under fire, the statement added.

**Official Accuses Somali Congress Leader on Toxic Waste Burial***NC1409045092 Cairo MENA in Arabic 1740 GMT 13 Sep 92*

[Text] Cairo, 13 Sep (MENA)—Adulle Sheikh Ismail, minister of state for foreign affairs in the transitional Somali Government, accused [words indistinct] of General Mohamed Faraj Aydid, leader of the Somali Congress, of being behind the burial of nuclear and toxic waste on Somali territory. He also accused him of being behind a plot to send Somali children to Israel.

In statements tonight, Abdulla Sheikh said the Italian companies that are reported to have buried this waste should be penalized, chased, and an international ban on dealing with them should be imposed. He added that he will ask Egypt and other scientifically advanced countries to send experts to check the damage this waste is causing the Somali people and territory.

The Somali minister appealed to all the Somali factions to come together and hold a reconciliation conference in a secure location outside Somalia, adding that it would have to be held outside Somalia due to the difficulty of movement inside the country. He stressed that his government does not object to holding the conference in a fraternal Arab country.

He also stressed that his country needs between 10,000 and 12,000 UN soldiers to ensure the arrival and distribution of relief aid.

**SNA To Form Committee To Investigate Toxic Waste Dumping***EA1809103592 Mogadishu Radio Mogadishu in Somali 1700 GMT 16 Sep 92*

[Text] Mr. Mohamed Farah Aidid, Somali National Alliance [SNA] chairman who is also United Somali

Congress chairman, has said at a news conference in Baardheere, that the SNA very much regrets Somalia being made a dumping ground for toxic and chemical waste.

Clear evidence in paper serial number, HQ-91/92 of 5 December 1991, on an agreement between various foreign companies and Manifesto/Suluh group [reconciliation committee set up in January 1991] signed by Noor Ali Osman, who claims to be Ali Mahdi's minister of health, is very surprising. Mr. Aidid said it was well known that while murderous Siad Barre was ruling the country he had agreed with foreign companies and countries that toxic waste could be dumped in the country. However, it was unfortunate that after getting the dictator out of the country, Ali Mahdi should enter into similar agreements with foreign companies prone to damaging the people, future generations, the natural environment, and the name of the Somali people and country so that he could get money in the pursuit of private interests.

Therefore, since the SNA recognizes the danger and impact of toxic waste to the lives and environment of the Somali people, it proposes the following points:

It greatly condemns the Manifesto/Suluh group led by Ali Mahdi and the foreign companies behind the ugly act;

The SNA leadership appoints a technical committee with knowledge on environmental issues so as to investigate the toxic waste dumped in Somalia;

I am very happy and we welcome the UN Environment Program [UNEP] report on appointing a technical committee on Somalia to investigate the matter. The Alliance guarantees the security of the committee and will support it in its work:

The Alliance appeals to the UN and especially UNEP, the International Court of Justice and the international community to bring to justice the Manifesto/Suluh group and the foreign companies concerned which have made a habit of continuously violating international law.

## SOUTH AFRICA

### Gas Corporation To Discuss Joint Ventures With Mozambique

*MB1409135092 Johannesburg BUSINESS DAY  
in English 14 Sep 92 p 7*

[Report by Edward West: "Sasol [South African Coal, Oil, and Gas Corporation] Eyes Mozambique Gas Project"]

[Text] Sasol [South African Coal, Oil and Gas Corporation] is to meet potential joint venture partners later this month to discuss the exploration and development of gas fields onshore of the Mozambican coast, Sasol assistant GM [general manager] Peet Steyn said yesterday.

Steyn said discussions were to take place with various international companies to find a third partner with the necessary experience in the development of onshore gas fields.

Sasol and the Mozambican energy company Empresa Nacional de Hidrocarbonetos de Mozambique (ENH) entered into an agreement in February regarding the joint exploration for and development of natural gas in that country.

In terms of the February agreement, ENH was continuing with exploration activities and was currently engaged in drilling the 11th exploration well in one of the potential fields, the Pande gas field.

Sasol was drawing up a market survey to establish the potential gas market. Steyn said although the reserves were not big, further exploration should find sufficient reserves to ensure a feasible project.

—Meanwhile, Soekor [Southern Oil Exploration Corporation] is following up approaches made by numerous potential investors in either participation or concession rights to its Bredasdorp Basin, Soekor spokesmen said.

The oil exploration parastatal had also approached various companies and authorities on the west African coast for further opportunities and several prospective projects were being investigated.

### Study Says Country Has Phased Out 60 Percent CFCs

*MB1509161792 Johannesburg Radio South Africa  
Network in Afrikaans 1400 GMT 15 Sep 92*

[Text] South Africa has already phased out 60 percent of the chlorofluorocarbons [CFCs] which were in use in the country during 1990. This means that South Africa is moving much faster than the 40 percent phasing out rate demanded by the International Montreal Protocol to protect the Ozone layer.

According to a regional study by the Department of National Health, South Africa still uses between three and four thousand tonnes of CFCs, which makes up only about 1 percent of the world's CFC utilization. CFCs in aerosol cans have already been phased out completely in South Africa, but are still found in some medicinal products, fire extinguishers, and domestic products. CFCs have to be completely phased out by the year 2000.

### Environmental Minister Warns Against 'Another Somalia'

*MB1709151292 Johannesburg Radio South Africa  
Network in English 1100 GMT 17 Sep 92*

[Text] Environmental Affairs Minister Louis Pienaar says it is essential that political negotiations be resumed to avoid a social, environmental, and health time bomb.

Addressing the Earth Life Africa Conference in Pietermaritzburg, he said the government was committed to managing future development in South Africa with full consideration to the country's pressing environmental issues so that future generations did not inherit another Somalia. He added that without economic growth, South Africa would be drawn into the suffocating quicksands of poverty, which was a far greater threat to the environment than development.

#### **IAEA Reports 'No Fault' With RSA Nuclear Program**

*MB1909111092 Johannesburg SABC TV 1 Network in Afrikaans 0530 GMT 19 Sep 92*

[Text] International Atomic Energy Agency [IAEA] inspectors have found no fault with South Africa's handling of its nuclear program. The IAEA confirmed at a conference in Vienna that 77 inspection missions have been sent to South Africa since the government opened its nuclear installations to inspection last year.

IAEA Director General Mr. Hans Blix told the conference that the inspectors found nothing to indicate that the list of nuclear facilities provided by South Africa is incomplete. The inspectors were allowed to visit military as well as civilian facilities.

Mr. Blix also announced that the IAEA's financial problems had been considerably eased following a contribution of about 6 million rands from South Africa and 10 million rands from Russia.

### **ZIMBABWE**

#### **Country Rations Electricity, Bans Decorative Lighting**

*MB2209120492 Johannesburg BUSINESS DAY in English 22 Sep 92 p 1*

[Text] Zimbabwe began rationing electricity yesterday as drought threatened its Lake Kariba hydro-electric scheme and breakdowns at thermal power stations plunged city suburbs into darkness.

Commerce and industry face cuts of between 20 percent and 30 percent in their average power usage, while domestic consumers face fines and disconnection if they exceed quotas set by the Zimbabwe Electricity Supply Authority.

All outdoor advertising and decorative lighting has been banned and major cities have been told to remove alternative street lights.



### Qu Geping Urges Vigorous Development of Environmental Industries

92WN0562A Beijing HUANJING BAOHU  
[ENVIRONMENTAL PROTECTION] in Chinese No 4,  
Apr 92 pp 6, 13

[Article condensed from speech by State Environmental Protection Bureau director Qu Geping [2575 2706 1627] at the closing ceremony at the 1992 National Conference of Directors of Environmental Protection Departments and Bureaus: "Actively Develop the Environmental Protection Industry"]

[Text] Developing the environmental protection industry is an urgent and important task we now face and a material guarantee for improving the results of investments in environmental protection. Some time ago, I saw analytical data from a research institute which showed that about 50 percent of our currently operating environmental protection equipment was not technologically advanced. This means that large amounts of investments have not fostered the role they should have, which is a very big problem. We are now implementing a series of new environmental time limit standards that may increase investments in environmental protection to more than 15 billion yuan by 1995. Increased investments are not our goal because our true objective is to improve the environmental situation. It will not be easy to increase investments in environmental protection and we will have to adopt more advanced technology and equipment to make them produce results fully. Thus, developing the environmental protection industry is an urgent task.

The conditions are mature now to develop the environmental protection industry. First, we have large numbers of S&T achievements from which to choose. In 1991 we sifted out 62 feasible applied technologies and 11 optimum applied technologies. Greater popularization and extension of them would generate enormous economic and environmental benefits. There are many pollution prevention and control technologies awaiting selection and evaluation in the State Environmental Protection Bureau's information base and various local environmental S&T information bases at all levels. Second, the state is now readjusting our industrial structure and emerging industries will inevitably be strengthened. These emerging industries include the environmental protection industry, and we should take advantage of this opportunity. Many military industry enterprises are now making a transition from military to civilian products and some of them could be shifted to the environmental protection industry. Third, there is now a substantial foundation for developing the environmental protection industry. We have over 2,000 plants, over 100 product varieties, a value of output greater than 3 billion yuan, and some products that are being exported to foreign countries. Fourth, we now have large

numbers of students who have graduated in environmental protection specializations including college graduates, master's graduates, and doctorates. These personnel should become more involved in work in the environmental protection industry and there is ample scope for them there.

How, then, can we develop the environmental protection industry? In developing the various sectors of the environmental protection industry, what work should the State Environmental Protection Bureau and local environmental protection departments at all levels be doing? Overall, they should be doing things according to the State Council Environmental Protection Commission's "Opinions Regarding Active Development of the Environmental Protection Industry". We should develop urgently needed products, mainly functionally advanced, high efficiency, and economical pollution control equipment, resource comprehensive utilization equipment, energy saving and water saving equipment, environmental protection projects, agricultural ecology projects, and so on. We must stress superior quality and cannot manufacture in a rough and slipshod way. There must be systemization and complete sets. Of course, if a single plant cannot produce complete sets, there must be a company for complete sets. It must also be inexpensive and economically rational and users should be able to bear the burden.

Development of the environmental protection industry must rely on promotion by all industries and sectors and it cannot develop without the active participation of all industries and sectors. The enterprises that now produce environmental protection equipment and products are mainly found in the machinery, metallurgy, light industry, electric power, military industry, and 10-odd other sectors. Ecological projects mainly depend on agriculture, forestry, urban construction, and other sectors. The development of the environmental protection industry as a whole also has to rely on the support of planning commissions, economic commissions, science and technology commissions, and other departments.

The primary tasks of environmental protection departments during the process of developing the environmental protection industry are to prepare good programs and to guide and coordinate work. First, based on the state's environmental protection development program, they propose program requirements for the environmental protection industry. Second, they meet with planning commissions at all levels to issue lists of environmental protection product to be given preference for development. Third, they undertake quality supervision to determine whether or not products meet environmental protection needs and rely mainly on environmental protection departments to conduct supervision. Based on this requirement, several environmental protection product quality inspection centers should be established. Fourth, they extend S&T achievements including opening up technology markets, promoting circulation of environmental protection products and

technologies, and so on. Fifth they meet with the relevant departments to study and formulate policies to promote development of the environmental protection industry, especially several preferential policies. Sixth, they organize and coordinate work.

Environmental protection management departments must not participate in administrative activities. This point must be stressed. In 1991, while putting in order, rectifying, and readjusting companies, the State Council clearly stipulated that the State Environmental Protection Bureau was not permitted to run companies or participate in management. There is also a regulation in the "Opinions Regarding Active Development of the Environmental Protection Industry" issued by the State Council Environmental Protection Commission in 1991 that environmental protection departments at all levels of government are not permitted to engage in environmental protection product management. Because environmental protection management departments at all levels of government carry out supervision in accordance with the law, they cannot participate in management activities, especially in those management activities related to their administrative profession. We must strictly implement a separation of government from enterprises. I hope that this point will receive the attention of environmental protection bureaus in all regions.

#### **Energy Resources Minister Views Environment, Development Strategy**

92WN0562B Beijing ZHONGGUO HUANJING BAO  
[CHINA ENVIRONMENTAL NEWS] in Chinese  
5 May 92 pp 1-2

[Article by minister Huang Yicheng [7806 3015 6134] of the Ministry of Energy Resources: "Strategic Choices for Coordinated Development of Energy Resources and the Environment in China"]

[Text] *Editor's note:* Readers are being given a look today at the "Environment and Development" articles solicited by the State Environmental Protection Bureau. Ministry of Energy Resources minister Huang Yicheng's article is the lead article and we recommend it to everyone. Subsequently, we will also publish articles by ministers from the Ministry of Metallurgical Industry, Ministry of Geology and Mineral Resources, Ministry of Forestry, Ministry of Agriculture, and other ministers describing the relationship between the environment and development.

Articles are being solicited this time for the purpose of matching up with the conference on "Environment and Development" to be held by the United Nations in Rio de Janeiro, Brazil from 3 to 14 June 1992. This conference is the first global conference of heads of state with the longest preparation time, highest conference level, and greatest influence to discuss the question of the relationship of the world environment and development since the 1972 United Nations Conference on Man and

the Environment. The "Man and the Environment Manifesto" 20 years ago awakened the environmental consciousness of mankind. Today's conference of global heads of state will study the Earth's future in coordination of the environment and development and is a reflection of the world's much more intensive environmental consciousness and increasingly prominent actuality of development issues.

Environmental regression and underdevelopment are two major imbalances now facing human civilization. The environment and development are scales used to assess mankind's future. We hope that comrades in all industries and all sectors will take up their pens and enthusiastically participate in this solicitation of articles.

The energy resource industry is a basic industry. The Chinese Government has always made the energy resource industry a strategic focus of economic development. Through 42 years of construction and especially during the last 10-plus years of reform and opening up, China's energy resource production and construction have undergone a takeoff of surging development. In 1991, China's total output of primary energy resources was 1.044 billion tons of standard coal, including 1.09 billion tons of raw coal output, 139.5 million tons of crude oil, and 675 billion kWh of electricity output. China has now become a world power in energy resource production and consumption but our per capita energy resource consumption levels at present are less than one-half the world per capita level. Thus, accelerating economic construction in China, striving to improve people's living standards, maintaining rational growth in total energy resource consumption, and increasing per capita energy resource construction levels are all necessary. According to China's economic and social development program, primary energy resource output will reach 1.4 billion tons in the year 2000, including 1.46 billion tons of raw coal output, 200 million tons of petroleum and natural gas equivalent, and electricity output of 1.2 trillion kWh, including 240 billion kWh from hydropower.

Coal dominates China's energy resource structure and now accounts for 74 percent of our primary energy resources, but only 23 percent of it is converted into clean and convenient electric power. Because most of our coal is directly used for fuel or burned in a decentralized way, the environmental problems it creates are becoming increasingly acute. This is particularly true in cities, which have concentrated industry and populations, consume more energy resources, and have severe pollution. Statistics from environmental protection departments indicate that 70 percent of the soot and 90 percent of the sulfur dioxide discharges in China come from coal used as fuel. The development of energy resources now faces a serious environmental challenge. To reduce the pressure from energy resource utilization on the environment, the Chinese Government has adopted a series of measures, gradually increased investments in the energy resource industry each year that are used for environmental protection, installed pollution

control facilities, and strengthened control over discharges of pollutants during the energy resource utilization process that have played a significant role in restraining pollution of the environment from energy resource production and consumption. However, because most energy resource producing and consuming enterprises have backward technology and outdated equipment, energy resource utilization rates are low and pollution control is very difficult, so achievements in control are hard to consolidate. Given the unique characteristics of China's energy resource structure, merely adopting pollution control measures is far from enough. We must make a major effort to promote technical progress and organically integrate rational resource utilization, improvement of energy resource utilization levels, and conservation of energy resources with environmental protection.

### **I. Rationally Utilize Energy Resources, Improve the Energy Resource Structure**

Improving our energy resource structure is an important step in China's selection of energy resource strategies. It includes two aspects. One is accelerating development and utilization of hydropower, nuclear power, and new energy resources and reducing the proportion of coal that is consumed. The second is reducing the amount of coal that is consumed directly and converting more of it into electricity and other clean secondary energy resources.

1. Accelerate hydropower construction. China is the world leader in hydropower resources with a developable hydropower capacity of 380,000MW. Hydropower has consistently been an energy resource that China has been concerned about developing and our investments in hydropower construction have increased each year. By 1991, China had an installed hydropower generating capacity of 37,160MW with electricity output of 122.3 billion kWh, equal to 18 percent of China's power output. The feasibility report for the world-famous Three Gorges project has been completed. Given the Three Gorges' suitable geographic location and concentrated resources, as well as an installable capacity of 17,000MW and yearly power output of 84 billion kWh, which is equivalent to using 40 million tons less of raw coal, it has strategic importance for improving China's energy resource structure and deployments. While accelerating construction of large and medium-sized hydropower projects, we are actively supporting local development of small-scale hydropower. China has abundant and widely scattered hydropower with substantial development potential. Small-scale hydropower requires small investments, produces results quickly, and is suited to decentralized construction, so it has positive effects on meeting the production and household electricity needs of regions distant from power grids and can replace some of the firewood and coal consumed in rural areas, which can reduce the shock to the ecology and environment. Our installed hydropower generating capacity may reach 80,000MW by the year 2000.

2. Actively develop nuclear power. The first phase project at Qinshan Nuclear Power Plant has now been connected to the grid and is generating electricity and the first generator at Daya Bay Nuclear Power Plant may be connected to the grid in early 1993. The plan is for our installed nuclear power generating capacity to reach 6,000MW by the end of this century. At that time, although nuclear power will account for only a small proportion of our total energy resource structure, it can lay a foundation and provide experience for development during the next century. Nuclear power is a clean energy resource that does not discharge CO<sub>2</sub> and it will inevitably occupy an increasingly important status in China's future energy resource structure.

3. Increase the proportion of coal that is converted into electricity. At present, coal used to generate electricity accounts for 23 percent of China's coal output, so we lag substantially behind the developed countries. To reduce environmental pollution from the direct use of coal as a fuel, more coal should be converted into electric power. Over the next 8 years, China will add more than 10,000MW in thermal power installed generating capacity each year and 50 to 60 percent of increased coal output each year will be used for power generation. We plan to increase the proportion of coal used to generate electricity in China to 33 percent by the end of this century.

### **II. Promote Technical Progress, Try To Conserve Energy Resources**

To guarantee the achievement of China's strategic objectives for economic and social development, the basic solution to our energy resource shortage is major efforts to conserve energy resources and increase the efficiency of energy resource utilization.

At present, China has both a shortage of energy resources and a widespread problem of high unit consumption and substantial waste, so there is great potential for energy conservation. Estimates by relevant areas indicate that average effective utilization rates for energy resources in China are only two-thirds of advanced levels in foreign countries. Energy consumption for major industrial products is 30 to 90 percent higher than in the industrially developed countries. Our total energy conservation potential is about 300 million tons of standard coal.

For example, coal-fired power generation accounts for 80 percent of China's total power output. Our average coal consumption to supply one kW of electricity is about 100 grams of standard coal higher than in the advanced countries. Calculated on the basis of China's 540 billion kWh-plus of electricity output from thermal power in 1991, we are burning an additional 50 million tons-plus of standard coal, which is equivalent to 70 million tons of raw coal.

Average comparable energy consumption per ton of steel in China is 1,000 kg of standard coal, which is 300 to 400 kg higher than advanced levels in foreign countries. In



1991, China produced 70 million tons of steel, so we consumed an additional 20 million tons-plus of standard coal.

China now has 400,000 industrial boilers that produce 800,000 tons of steam and consume more than 300 million tons of coal each year at a thermal efficiency of just 50 to 60 percent, and they cause severe waste and pollution. We now have 140,000 industrial kilns and ovens that consume over 200 million tons of coal a year, and their thermal utilization rates are also low. The energy conservation potential for these two items is more than 100 million tons.

The operational efficiency of the blowers and water pumps in China's industrial departments is 20 percent lower than advanced levels in foreign countries, which is equivalent to consuming an additional 30 billion kWh of electricity each year. If energy consumption in eight main categories of electricity consuming products including electric furnace steel and iron alloys, electrolytic aluminum, and so on were to attain advanced levels in China, the potential electricity savings each year would be 10 billion kWh.

The situation in these areas shows that there is great potential and many routes for energy conservation in China. We must adopt important technical progress measures over the next decade to replace and upgrade equipment and reduce energy consumption per unit of product and try to conserve about 20 million tons of raw coal on the average each year in China.

1. The electric power industry should reduce coal consumption for power supply to about 370 grams of standard coal per kWh by the end of this century, a reduction of 60 grams.

a. Newly-constructed thermal power plants should mainly adopt 300MW and 600MW generators and try to prevent coal consumption from exceeding 330 g/kWh for power generation and 270 to 280 g/kWh for heat supply generators. We should not permit projects that exceed coal consumption indices to be established. We plan to increase our thermal power generating capacity to 90,000MW by the year 2000. If all of it were to be high efficiency, it would play a substantial role in reducing coal consumption for power generation in China.

b. Accelerate technical upgrading, replace low efficiency and moderate and low-pressure generators with high efficiency large capacity generators. We should upgrade 18,500MW of the 26,000MW we now have in moderate and low pressure generators by the end of this century, and we plan to upgrade 5,500MW during the Eighth Five-Year Plan, including some that can be converted to heat and power cogeneration. In a situation of basically maintaining the amount of coal used to generate electricity, if we complete the plan during the Eighth Five-Year Plan we could increase the installed generating capacity by 3,000MW and generate an additional 15 billion kWh of power each year as well as increase the amount of heat supplied to urban areas. Soot discharges

from power plants alone could be reduced by a net amount of 500,000 to 600,000 tons.

c. Carry out perfected upgrading of Chinese-made 125MW, 200MW, and 300MW generators. Focus on the circulation portions of 200MW generator steam turbines and low efficiency auxiliary generators and boiler combustion systems. After upgrading, coal consumption to supply power from 200MW generators should be reduced by 20 g/kWh from the present 390 g/kWh. China now has more than 110 of the 200MW generators and their power output can be increased by about 5 billion kWh after upgrading.

It is expected that adoption of these important measures could reduce coal consumption to generate power by 60 g/kWh by the end of this century. At that time, calculating electricity output from thermal power at 1 trillion kWh, we could burn 80 million fewer tons of raw coal. For environmental protection, this would mean a reduction in the pollutants discharged by burning 80 million fewer tons of raw coal.

2. Accelerate upgrading of our 400,000 existing industrial boilers. The way to upgrade industrial boilers is to replace them with large boilers and achieve centralized heat supply and heat and power cogeneration. Using 60 to 70 ton pulverized coal boilers could increase thermal efficiency from the present 50 percent to 90 percent. This is particularly true for heat and power cogeneration, which would have extremely significant energy conservation benefits and environmental benefits. We have done a great deal of work over past 10-plus years in this area and made substantial achievements. During the next 10 years, we should continue to adhere to the principle of centralized heat supplies and heat and power cogeneration and try to conserve about 100 million tons of coal used in industrial boilers by the end of this century.

3. Big energy consumers like iron and steel, the chemical industry, construction materials, and so on should make reducing energy consumption an important principle for technical upgrading and capital construction and try to reduce energy consumption per unit of product by 10 to 20 percent over the next 10 years.

4. Make major efforts to extend civilian shaped coal. Combustion is more complete and the thermal efficiency is higher when using shaped coal, and it can reduce soot discharges by 60 percent and conserve coal by 20 to 30 percent. Adding sulfur fixing agents to shaped coal can reduce sulfur dioxide discharges by 50 percent. In a situation of low popularization rates for central heat supplies in China, extension and development of shaped coal conforms to our national conditions and is the most economical and realistic way to conserve coal and deal with the atmospheric pollution caused by decentralized burning of raw coal. We should adopt several encouragement policies to accelerate the pace of extending civilian shaped coal and basically achieve a shift to shaped coal

for the coal used for household purposes by urban and rural people by the end of this century.

### III. Adopt Practical Measures, Improve the Quality of Coal Supplies

A large portion of the raw coal that China now produces has a low heat value, large ash content, and high sulfur content and does not undergo dressing and processing. The direct burning of this type of coal increases the burden of pollution control and increases ineffective transportation. For this reason, in the future we should focus on improving coal quality and increasing product varieties as important measures for technical upgrading in the coal industry.

1. We should increase the washing rate for coal. During the Eighth Five-Year Plan, the coal washing rate should be increased from the present 17.2 percent to 19 percent and afterwards we should also gradually increase the proportion that is washed and try to dress and process all coal that is hauled over long distances.

2. Give preference to developing and using superior quality coal and rationally allocate coal. To reduce atmospheric and environmental pollution in urban areas, we should try to supply more superior quality coal. If the heat value of the coal now used in urban areas were to be increased by an average of one-fourth, there would be a corresponding proportional reduction in pollutants discharged. This would play an extremely important role in improving the quality of the atmosphere and environment in urban areas and the control capital that would be saved could be used for central heat supplies, coal gasification, and other purposes in cities. Acid rain has appeared in several regions in China and it is mainly due to the relatively high sulfur content of the coal they burn. A more realistic and economical way to control discharges of sulfur dioxide is to restrict extraction of high-sulfur coal and transfer in some superior quality coal. Shenfu-Dongsheng and other coal fields have large reserves that are easy to extract and their coal has a high heat value and low sulfur content, so preferential development and utilization of it would have comprehensive economic and environmental benefits. This is particularly true for Beijing, Tianjin, and Shanghai municipalities, each of which consume over 20 million tons of coal a year. We should adopt several slanted policies to supply these large cities with more superior quality coal from Shenfu-Dongsheng coal field.

The strategic choices in these three areas are fundamental measures for aiding in reducing soot, sulfur dioxide, nitrous oxides, and even CO<sub>2</sub> discharges, which is a concern in all countries. China is a developing country and achieving the objectives we have set will require large amounts of capital and advanced technology, so the main route at present is tree planting and afforestation. Forests are natural factories that absorb carbon dioxide and generate oxygen. The forest coverage rate in China is now 13.4 percent and we plan to increase the forest coverage rate in China to 17.1 percent by the year 2000, which is equivalent to increasing the forest

area by about 360,000 square kilometers by the end of this century. During the process of intensive reform and expanded opening up, we are willing to further expand exchanges and cooperation with all countries, import capital and technology, and promote the coordinated development of energy resources and the environment in China to make a contribution to protecting the global environment.

### Water Resources 'Crisis' Examined

92WN0725C Shanghai WEN HUI BAO in Chinese  
15 May 92 p 3

[Article by Correspondent Zhang Ziqiang [1728 5261 1730]: "Alarm Sounds on China's Water Resources Crisis. Extremely Unevenly Distribution of Water Resources in Time and Space; Poor Results From Water Control and Water Protection Efforts. Establishment of a Water Resources Control Authority Recommended for Macroregulation and Control as Well as Formation of Expert Consultant Teams for Coordinated Attacks on Technical Difficulties in the Protection of Water Resources"]

[Text] Assistant professor Zhou Zhenguo [0719 2189 0948], the deputy chairman of the Water Resources and Environmental Research Office of Tongqi University, and Xu Kuian [1776 7608 1344], a high ranking engineer, recently presented some alarming information about water resources. Reportedly, China's water resources do not meet needs, China ranking eighty-eighth globally in per capita amount of water. The amount of water is unevenly distributed in both space and time. Sixty-four percent of all the country's farmland is located north of the Chang Jiang, but this area has only 18 percent of the country's water. The large scale pumping of fresh water in southern coastal areas has caused the reverse siphoning of sea water.

Once again, the country's water crisis alarm bell has sounded. Zhou Zhenguo and Xu Kuian said that although a water law was enacted more than 10 years ago, it is not sufficiently authoritative, and lack of compliance is serious. Results in the control and protection of water resources have been few and far between. Now, in addition to reviving the authoritativeness of the water law and enforcing the law better, various actions must be taken for comprehensive control. Specific methods for dealing with the situation are as follows:

- Establishment of an authoritative administrative agency for the management of water resources that can effect overall regulation and control as a means of centralizing management of the supply of water within river basins, the development of water resources, and the control of water pollution, particularly in cities. This authoritative agency must be made up of people transferred from water conservancy, urban construction, and environmental protection units in order to overcome past problems in the diffusion of authority between higher and lower levels and between different departments or regions.

- Boundary lines between sectors and systems must be broken down, experts in hydrogeology, hydrology, water chemistry, pedology, and environmental science brought together to form strong expert consultant teams to coordinate the attack on technical difficulties in the protection of water resources. This will change the situation in which schools do nothing about difficulties since they lack authority even though they have capable personnel available.
- Use of the role of the newly emerging middle aged and young forces in the task of controlling and using water. The protection of water resources is a new scientific field in which there are no outstanding old experts or old professors. Furthermore, in scientific research work today, nine out of 10 well-known old professors cannot be induced to put in a bid to work on these difficulties; thus, the potential of the middle aged and young researchers who possess certain qualifications to perform this work cannot be brought to bear. Therefore, policies must tilt toward middle aged and young researchers, and a certain amount of funding must be provided for the natural sciences.

### **Lanzhou Begins Atmospheric Pollution Cleanup**

92WN0725B Beijing RENMIN RIBAO OVERSEAS EDITION in Chinese 10 Jun 92 p 1

[Article by Correspondent Wang Ding [3769 0002]: "Lanzhou Accelerates Implementation of 'Blow Sky Plan'. To Bring Back Beautiful Scenery of Bright Mountains, Clear Waters and a Blue Sky"]

[Text] Xinhuashe, Lanzhou, 9 June Dispatch. An environmental protection plan costing 2 billion yuan is to bring blue skies back to industrially strategic Lanzhou in northwest China. The city's mayor, Ke Maosheng [2688 5399 4141], recently announced that the government is in process of organizing implementation of a "blue sky plan" to bring serious atmospheric pollution here under permanent control.

Lanzhou, which is located in the valley of the Huang He, was once a city of bright mountains, clear waters, and blue skies located along the Silk Road. Here, using the advantages that available resources provided, was built China's renowned petroleum refining and metallurgy industry base. Industrial development and rapid population growth brought economic prosperity, but it also created increasingly serious damage to the ecology and environmental pollution.

During the past decade and more, the state has established environmental protection agencies here, and invested huge sums to clean up a number of principal sources of pollution to bring atmospheric pollution here under effective control. Nevertheless, because of the distinctive character of its industry, as well as the geographic and meteorological conditions prevailing here, Lanzhou's environment has not yet been fundamentally transformed.

Ke Maosheng said in a briefing that the "Blue Sky Plan" will begin by applying scientific knowledge to change a portion of the ecological environment and the make-up of the city's energy supply, instituting a series of prevention and control measures. Specifically, these measures consist of five major engineering systems including the planting of green plants, production of gas from coal, supplying heat from central locations, use of solar energy for heating, and making of coal briquettes [xingmei jiagong - 0992 3561 0502 1562]. The entire plan is to be completed by the end of the 20th century. Nearly 1 billion yuan has been invested in construction, and some projects have begun to function.

### **Shanxi Province Undertakes New Environmental Control Efforts**

92WN0725E Beijing ZHONGGUO HUANJING BAO [CHINA ENVIRONMENTAL NEWS] in Chinese 23 Jun 92 p 1

[Article by Ren Tailong [0117 1132 7893]: "Five New Trends in Shanxi's Environmental Protection Work. No Let Up in Development; Environment and Economy Fly in Tandem"]

[Text] The correspondent recently learned from Shanxi provincial environmental protection authorities that after nearly 10 years of effort, environmental protection work throughout the province has begun to move out of a situation in which the authorities battled alone into a situation in which units at all levels are taking active part. It has moved from control efforts only to a quest for multiple benefits, and from negativeness and passiveness on the part of enterprises to everyone moving ahead. Five new trends have appeared in the coordinated development of the environment and the economy.

First is a change from the former situation of environmental protection being dissociated from economic development, every level now making environmental protection a part of national economic and social development plans, and diligently pursuing it as an important integral part of development plans. In both the seventh and the eight Five-Year plans, the provincial CPC committee and government listed environmental protection as one of the province's five main areas of development, and broke down for implementation environmental protection tasks in each of the annual plans. The provincial treasury annually disbursed 35 million yuan to be used specifically to clean up environmental pollution and to build special environmental protection projects. The province has invested a total of 1.1 billion yuan in environmental protection since the Seventh Five-Year Plan, building more than 4,600 environmental protection projects. The national economic and social development plans of 11 of the provinces prefectures and

cities, and of more than 70 of its counties and districts highlighted environmental protection. This includes many prefectures that began to synchronize investment, planning, and project arrangements, and to put them into effect in concert.

Second is a change in government agencies fighting alone, units at all levels now pitching in for a common effort. The Provincial People's Congress Standing Committee established the first national permanent environmental protection work committee, which annually convenes provincewide municipal people's congress environmental protection work panel discussions, thereby effectively improving monitoring of compliance with environmental protection laws. In 1989, provincial governor Wang Senhao [3769 2773 3185] signed environmental protection goal responsibility agreements with six provincial cities and the leaders of seven provincial departments and bureaus, and the provincial government drew up regulations covering the environmental protection duties of all prefectures, municipalities, counties, and departments directly under jurisdiction of the province. This produced a new situation in which everyone pitches in to carry a heavy load. According to incomplete statistics, since 1989 people's congresses at every level in Shanxi Province, the government, CPPCC's, and all government departments have taken part in or directly solved more than 120 prominent environmental problems, thereby giving impetus to the development of environmental protection endeavors.

Third is a change from the former environmental protection practice of simply cleaning up pollution to the beginning of an effort to obtain multiple benefits. The environmental protection practice of simply cleaning up pollution became less and less viable and bogged down in passivity. Beginning in 1990, the provincial environmental protection bureau reoriented its work, raising the slogan of "serve economic construction, get on the economic track, take part in moving ahead, and work together." It also made decreased consumption and multiple use for the conservation of energy and water a basic policy of environmental protection. During the past two years, Shanxi Province and environmental protection units at all levels provided 36 million yuan in support of 46 "double conservation" and multiple use projects, some of which have already produced results. In 1992, the Shanxi Provincial Environmental Protection Bureau decided to build large key environmental protection projects, seven of which used wastes in multiple ways. Today, multiple use of the "three wastes" [waste gas, waste water, and industrial residues] throughout the province has produced more than 120 million yuan in economic returns.

Fourth is change from antiquated after-the-fact environmental control to the use of scientific and technical advances, the development of industry, and the vigorous development of environmental protection industries. In the course of 20 years of developing environmental protection endeavors, virtually two-thirds of all efforts were devoted to repeated clean-ups of smokestacks, and

cleaning up water at discharge points. During the past year, environmental protection units and economic units in Shanxi Province have both emphasized work on reducing the discharge of pollutants by improving the entire production technology process, thereby reducing inputs and improving outputs. During 1991, the provincial Environmental Protection Bureau, the provincial Science Committee, and the provincial Department of Chemical Industry applied a new technology that recovered more and more dilute ammonia water at small chemical fertilizer enterprises. After complete implementation at 79 small chemical fertilizer enterprises, a 15 million yuan per year increase in returns will become possible.

Fifth is a change in the former purely administrative control. By persevering in clean-ups according to law, a new stage has begun in which everyone works together from top to bottom and the entirety moves ahead. At one time, quite a few enterprises would rather pay fines than work on environmental protection, or they operated their environmental facilities only sporadically. To deal with this situation, environmental protection units at all levels in Shanxi Province, adhered to the practice of providing services with one hand, monitoring and controlling according to law with one hand, and not going hard in one area only to go soft in another. During 1992 alone, environmental protection units in Taiyuan City meted out punishments to more than 30 units. At the same time, environmental protection units in cities in the province linked hands to provide 3.82 million yuan in assistance funds to help more than 20 units clean up that helped improve their facilities. Today, enterprises and environmental protection units think along the same lines and make efforts in the same direction, thereby producing a heartening new momentum.

#### **Pollution Destroying China's Fishing Industry**

92WN0725F Beijing ZHONGGUO HUANJING BAO  
[CHINA ENVIRONMENTAL NEWS] in Chinese  
23 Jun 92 p 1

[Article by Correspondent Li Ruinong [2621 3843 6593]:  
"Grim Situation in Ecological Environment of Country's Fishing Industry. Nearly 1,000 Pollution Accidents; Economic Losses of More Than 300 Million Yuan"]

[Text] The increase in pollution accidents and damage to the ecological environment are causing serious harm to the country's fishing industry. According to incomplete statistics on 29 rivers in 11 provinces, municipalities, and autonomous regions, fish have virtually vanished from 2,800 kilometers of rivers. There are no fish to catch. Experts concerned estimate that nearly 1,000 pollution accidents occur nationwide each year that damage the fishing industry causing the loss of 200,000 tons of fish. This translates into losses of more than 300 million yuan.

The correspondent recently learned from the Bureau of Fisheries of the Ministry of Agriculture that according to



incomplete early 1992 statistics from 16 provinces, pollution accidents causing 10,000 yuan or more damage to the fishing industry numbered 251 in 1991, the fishing industry incurring 150 million yuan of direct economic losses. Twenty-three of these were exceptionally large pollution accidents causing losses of more than 1 million yuan from which the fishing industry's economic losses amounted to more than 118 million yuan. The trend is toward a marked rise from the 14 cases in 1990 and the nine cases in 1989. Even more serious is the losses from damage to the fishing industry ecology that results from the lingering effects of pollution, which is much greater than from the immediate accidental death of fish. Experts estimate this loss may amount to several billion yuan annually.

Relevant statistics show 1991 losses to the fishing industry as a result of pollution accounted for 73 percent of losses in the breeding industry, and for 27 percent of natural resources losses. Most pollution accidents were never paid for. The fishing industry received only 8.4 million yuan compensation, which was only 6 percent of the 140 million yuan lost.

Analysis shows that damage to the fishing industry from pollution accidents is becoming worse and worse. The main reasons listed in order of importance are poor environmental control at factories, mines and business enterprises, and poor conception of environmental laws and regulations. Most pollution accidents result from enterprises' lack of environmental controls, indifferent treatment of waste water, and the direct discharge of untreated waste water that does not meet discharge requirements, or accidental leaking of such waste water. Once a pollution accident occurs, timely action is not taken in most cases. Pressure is not brought to bear on the offending unit. Consequently, environmental laws and regulations are not very well enforced.

The fishing industry authorities have asked all quarters of society, particularly the leaders concerned, to realize that the fishing industry environment is necessary to the development of fishing industry production and to supply aquatic products to the public. Active support must be given to protection of the fishing industry's ecological environment.

#### **Government To Promote Practical Application of Research Achievements**

92WN0725D Shanghai WEN HUI BAO in Chinese  
30 Jun 92 p 3

[Article by Reporter Zhong Qin [6945 0530]: "China Begins to Use Administrative Coercion to Widen the Application of Scientific Research Achievements. State Departments Concerned To Promote Paper Retrieval Machine Plain Water Technology Using the Jet Stream Flotation Method at Tongqi University Today"]

[Text] China has begun to apply administrative methods to coerce the greater application of scientific research achievements to production. The conference for the

promotion of the paper recovery machine plain water technology using the jet stream flotation method that opens today at Tongqi University today was announced jointly by the State Environmental Protection Bureau and the State Science and Technology Commissions through the issuance of documents bearing red headlines. The State Science Commission, the State Education Commission, and personnel in charge from both environmental protection and light industrial units in various jurisdictions attended the meeting. This grand occasion fully reflects the authoritativeness of the recently announced plan for promotion of the first group of the best environmental protection applied technologies.

Statistics show more than 4,000 technologies in the State Environmental Bureau's scientific achievements archives for which an application for awards has been made, but only slightly more than 20 percent of these have been put to practical use. In order to accelerate the translation of environmental protection science and technology into real economic, social, and environmental returns, the State Environmental Protection Bureau has proposed as its overall strategic thought a shift in the emphasis of its scientific and technical organization management work to the screening, evaluation, and application of all categories of scientific and technical achievements. Beginning in 1992, a number of the most practical technologies are to be selected each year for which the application is to be organized through intensive government action that makes fullest use of the legal system, administrative, educational, and economic methods.

The first group of State Environmental Protection Committee approved and announced command style promotion plan technologies number 11 in all. These were selected following strict evaluation of more than 700 practical technologies. Economic and technical analysis shows these technologies to be mature, reliable, economically rational, and offering good prospects for promotion. Nine of them can recover investment within 2 years. At a 30 percent spread rate throughout the country, they can produce a net return of between 500 million and 600 million yuan yearly. The State Environmental Protection Bureau requires that all capital construction projects, projects for the control of sources of pollution within a fixed period of time, and projects that use special funds or assistance funds for sources of pollution, as well as other pollution prevention and control projects for which these technologies are applicable must give priority to their use. The State Environmental Protection Bureau is drawing up methods for managing the spread of the most practical technologies, and organs in charge of the spread of technology in government departments in all jurisdictions are also gradually establishing such methods. Paper recovery machine plain water technology using the jet stream flotation method, which was listed among the first group of best environmental protection applied technologies

has been applied in more than 200 units, and this technology is suitable for application to at least another 2,000 units nationwide.

#### **Agriculture Ministry Working To Reduce Pollutants in Food**

HK1309054592 Beijing CHINA DAILY (BUSINESS WEEKLY SUPPLEMENT) in English 13 Sep 92 p 4

[By Wu Yunhe: "China Strives for Unpolluted Goods"]

[Text] Chinese agricultural departments are striving to knit together a "green food" production system to make farm produce free from industrial pollution.

With the growth of the country's industrial infrastructure, it may be inevitable that there are such byproducts as excessive dumping of industrial wastes into farmlands.

Liu Lianfu, deputy director of the State Farms Administration Bureau under the Ministry of Agriculture, says that his bureau is seeking clean land and financial support to develop pollution-free agriculture.

The food will be produced by farms and enterprises under the Ministry of Agriculture and the locations will be in remote areas with ideal ecological environments.

In these areas, chemical fertilizers will be banned.

The effort is mainly aimed at improving the quality of eight kinds of foodstuffs including pork, eggs, milk, grain, fruit, drinks, tea and canned food, Liu said.

"The Chinese Government has brought this green food project into line with its Eighth Five-Year Plan (1991-95)," he said.

During the period, the ministry will establish 95 green food production bases across the country which will join the current high-quality, non-polluted food production force comprising at least 70 enterprises.

Included in the measures to carry out the green food project are also the establishment of environmental protection and food inspection institutions and a nationwide raw material processing, scientific research, transportation and packaging network.

The government has formulated an inspection standard for any green food to be sold on the market.

Liu said that China has already approved the official use of its first special trademark for green foods.

The State-Administration of Industry and Commerce (SAIC) announced in April its approval of the trademark, "Green Food", for use of food products which contain no harmful elements.

#### **Guangdong Province 'Hesitant' on Offer To Administer Daya Bay Plant**

HK1409025592 Hong Kong THE STANDARD in English 14 Sep 92 pp 1, 3

[By Rain Ren]

[Text] The Beijing government will authorise Guangdong Province to administer the U.S.\$24.9 billion (HK\$194.21 billion) Daya Bay nuclear plant when it begins operating in October next year.

But Guangdong provincial authorities are hesitant about accepting the offer.

A Chinese source said Guangdong officials were not sure whether the provincial government could repay the plant's anticipated debt of U.S.\$4 billion out of the revenue earned from the project.

They were also concerned about retaining Chinese technical experts, most of whom were brought from Beijing.

Guangdong has set up a feasibility study group to look into the matter, outlined in a report from Beijing, according to the source.

In Hong Kong, legislator Fung Chi-wood said from the financial point of view, the decision was very bad and could create a huge burden for Guangdong.

"I hope the central government is not trying to transfer the financial burden to local government," Rev Fung said.

It is understood the chances of Guangdong being able to refuse the offer are small as Beijing wants the enterprise to be managed on a less senior administrative level.

An official close to the provincial government said Beijing believed this would ensure Daya Bay would obtain maximum economic results.

Based on original cost estimates of the plant, Guangdong Nuclear Power Investment Company and Hong Kong Nuclear Investment Company put U.S.\$400 million into the project and borrowed an extra U.S.\$2.8 billion from international banks.

#### **China Maps Out 'Agenda 21' for Environmental Protection**

HK1509090092 Beijing CHINA DAILY in English 15 Sep 92 p 1

[By staff reporter Wang Yongchong: "Agenda 21 Will Help Environment"]

[Text] In a bid to further improve its environment while maintaining rapid economic development, China is mapping out an all-round outline on environmental protection, according to an official with the State Science and Technology Commission (SSTC).

"China's Agenda 21, following the Agenda 21 adopted at the World Summit held in Rio de Janeiro, Brazil, in June this year, aims to provide a code of conduct for China to help boost its economy while improving environment," SSTC's Deputy Director Deng Nan said yesterday at the meeting for the drafting of China's Agenda 21. Some 100 representatives from about 50 ministries, commissions, companies, and governmental or non-governmental organizations attended the meeting.

According to Deng, 39 major subjects will be listed in the agenda covering protection of the atmosphere and biodiversity, the management of toxic and dangerous products, desertification, the role of women, youths, workers, intellectuals and national minorities in environmental protection, and the sustained development of the agriculture, energy, chemical and other industries. The agenda is scheduled to be finished before the end of this year.

"China is at a stage of rapid economic development, but the environmental problem has become one of the most important problems threatening its people's life and economic growth," said Deng. "It is of great importance to map out an environmental protection agenda for China to link environmental improvement with economic development," Deng said.

But China is a developing country with a shortage of experience, technology and finance on bio-ecological protection and the management of environmental pollution, Deng said, thus the enhancement of co-operation is urged between different organizations at home and international ones.

Recent statistics show that acid rain has increased in recent years in many urban areas.

And all seven major river systems in the mainland have been polluted in different degrees, especially the branches running through urban areas.

#### **Report Outlines Strategy on UNCED Commitments**

*OW1709065792 Beijing XINHUA Domestic Service  
in Chinese 0850 GMT 16 Sep 92*

[Text] Beijing, 16 September (XINHUA)—Upon approval by the party Central Committee and the State Council, the General Offices of the CPC Central Committee and the State Council recently transmitted the Report on China's Attendance at the UN Conference on Environment and Development [UNCED] and on Relevant Actions, which was issued by the Ministry of Foreign Affairs and the State Environmental Protection Bureau. The report pointed out that our nation, along with other countries attending the conference, accepted the documents adopted by UNCED as well as signed two conventions. This was not only our commitment to

assuming specific international obligations and responsibilities, but also an actual need of proper environmental protection and acceleration of economic developments in our country. In line with UNCED guidelines and specific conditions in the country, the report suggests 10 actions and measures to be taken in our environmental protection and development. Here are its specific contents:

#### **I. Carry Out a Strategy for Sustained Development**

Our present economic development basically is still following an old pattern characterized by high consumption of resources and extensive operations which not only greatly damages the environment but also adversely affects the sustaining power of the development itself. Therefore, taking the path of sustained development through a change of development strategy is the right choice for accelerating our economic development and resolving environmental problems. To this end, we must reaffirm the guiding principle of "effecting synchronized planning, implementation, and development in the fields of economic construction, urban and rural development, and environmental improvement." When formulating and implementing development strategies, people's governments at all levels and the relevant departments should draw up environmental protection programs and effectively incorporate the objectives and measures for environmental protection into medium- and long-term programs as well as annual plans for national economic and social development. They should also include the costs of pollution prevention and control in government budgets at various levels so as to ensure the implementation of such measures. In readjusting the production pattern, they should strictly enforce the industrial policy to phase out technologies, installations, and products that are wasteful of energy and resources and cause serious pollution. In carrying out development projects, they should strictly abide by laws and regulations and conduct appraisals before launching any projects. In assessing economic situation and cadres' administrative performance at various localities, they should not only look at the pace of development and economic returns, but make social and environmental benefits criteria for assessment.

#### **II. Adopt Effective Measures To Prevent Industrial Pollution**

At present, pollutants which influence the quality of environment are mainly from industrial production. Outmoded equipment and facilities and backward technology are the principal causes of pollution. Therefore, when we start a new project, expand a project or rebuild a project, we should raise the technological level and do our best to adopt clean technology to reduce energy consumption and produce fewer pollutants. We should, in line with environmental conditions, make reasonable arrangements in allocating resources. Governments at various levels should be strict in examining new projects and reject industrial projects which adopt backward technology, make unreasonable arrangements, and

which may pollute the environment. In preventing industrial pollution, we should advocate comprehensive management and centralized control for an area, and attach importance to economies of scale. We should follow the principle of providing guidance and restrictions; actively prevent pollution caused by village and town enterprises; and strictly forbid wanton logging and excavating to tap natural resources. We should vigorously make comprehensive use of resources and do our best to turn the "three wastes" [waste gas, waste water, and industrial residue] into resources. In changing the operational mechanism of enterprises, we should make clear the responsibility enterprises hold for reducing pollution. We should adhere to the principle of "making polluters pay the costs," and must not allow enterprises to benefit by shifting the cost of clearing pollution on to society. We should encourage activities to create "clean and civilized plants" and "advanced enterprises in environmental protection," and strive to establish a new civilization for modern industry.

### **III. Penetratingly Embark on Comprehensive Improvement of Urban Environment, Seriously Control the "Four Pests" [rats, bedbugs, flies and mosquitoes] in Cities**

Promptly curbing environmental pollution in cities will have a significant bearing on improving the investment environment, promoting reform and opening up, and raising the people's living standards. We should continue to embark on a comprehensive improvement of environment in cities by laying stress on preventing industrial pollution and building infrastructure in a proper manner. The main points of attention include: Preventing smoke and dust pollution; popularizing coal for industrial use and coal for family use; limiting wanton use of unsorted coal; vigorously promoting centralized supply of heat; dividing and disposing of polluted water in cities, and making use of waste water if possible; encouraging comprehensive utilization of solid residue and garbage and reducing their harmfulness; promptly changing the practice of spreading garbage around cities; and strictly controlling sound pollution caused by industrial production or transportation. In building a new district or rebuilding an old town, we should plan to centralize the supply of heat and fuel, gardening, and disposal of garbage and foul water.

### **IV. Raise Energy Utilization Rate and Improve Energy Structure**

To meet the conditions of the Climate Convention, controlling carbon dioxide discharge and reducing atmospheric pollution, the most effective measure is energy conservation. Currently, there is great potential for energy conservation in China because the per unit product energy consumption is high. Therefore, it is necessary to make people across the country understand the importance of energy conservation: It is necessary to implement measures for energy conservation; to gradually improve the energy pricing system for energy; to fix the price of coal according to its quality; to enlarge price

differences based on quality; to speed up development of the power industry; to raise the ratio of coal turned into electric power; to develop giant power generating units; to discard or transform medium and low-pressure power generating units to conserve energy; to realize the goal of the Ministry of Energy Resources—"by the year 2000, coal consumption per kilowatt-hour of electricity in China is to be reduced by 60 grams"; to gradually raise the proportion of coal dressing and processing; to encourage cities to develop the production of coal gas and natural gas; to supply heat in a concentrated way; to develop the joint production of heat and electric power; and to supply urban people with good-quality coal on a priority basis. It is necessary to gradually change our country's energy structure, which relies on coal as the main source of energy; this means speeding the construction of hydroelectric and nuclear power stations, developing and popularizing, taking account of local conditions, clean energy resources such as solar, wind, thermal heat, tidal, and biological energy.

### **V. Popularize Ecological Agriculture, Persist in Planting Trees, and Effectively Protect Biodiversity**

Agricultural soil and forest cover are the components of the ecological environment. Vigorously planting trees to create forests; strengthening the protection of land and forest resources; and changing the situation in our country in which farmland soil is becoming lean and poor and forest cover is low are all urgent and long-term tasks. State and local authorities should gradually increase input in ecological agriculture, in planting trees, and in growing forests. They should also encourage initiative among society and raise funds from various channels and levels to speed up the pace of soil reform and afforestation. It is necessary to carry out land control and forest control on the basis of the law, conscientiously limit the scale of lumbering, and strengthen the management of farmland and forests in order to ensure success in soil improvement and the steady growth of forest resources. Our country is rich in biological resources, which are of great economic and scientific value. We should step up the survey of our country's biological resources and the present condition of endangered species, and further strengthen the protection and utilization of biodiversity. We should gradually expand the acreage of natural reserves, improve them, and manage them well. We should draw up plans to establish centers for protecting and breeding rare, wild species and good strains of domestic poultry, domestic animals, crops, and medicinal herbs; we should protect biological species and develop and utilize genetic genes; and also strengthen the management of exports in this respect. We should conduct scientific research on biological resources and develop and use them rationally. Acts of indiscriminate fishing and hunting, and acts of indiscriminate gathering and killing of rare plants and animals must be dealt with according to the law.



#### **VI. Vigorously Advance Scientific and Technological Progress, Strengthen Research in Environmental Science, and Actively Develop Environmental Protection Trades**

To resolve the problem of development and the environment, we must rely on technological progress. Governments at all levels, relevant departments, enterprises, and institutions should conduct research to deal with their major environmental problems. They should develop or import water-saving and energy-saving new technologies which leave few or no pollutants; and select, assess, and popularize applicable technology for environmental protection. To achieve this, they should increase input in this respect. To transform scientific and technological achievements speedily into capacity for pollution control, we must correct, guide and support the development of environmental protection-related industries. We must give priority to the development of environmental protection-related industries; develop and popularize advanced and practical environmental protection equipment; actively develop the production of green products [lu se chan pin 4845 5331 3934 0756]; establish a standard system for product quality; and improve the quality of environmental protection products. Planning, scientific and technological departments at all levels should fully support pollution control and the construction of demonstration projects and demonstration zones in natural reserves. Special consideration should be given to natural reserves with respect to special projects and funding.

#### **VII. Protect the Environment by Applying Economic Means**

With the deepening of economic structural reform, the market mechanism has been playing a greater regulatory role in the economic life of our country, and the operating mechanism of enterprises is changing gradually. Therefore, governments at all levels should resort more to the application of economic means to protect the environment. In accordance with the principle that use of resources should be paid for, governments at all levels should gradually begin collecting fees for the use of resources; study the idea of collecting an environmental tax; and study the possibility of including natural resources and the environment in the accounting system of the national economy. Thus, market prices will accurately reflect the environmental price of economic activities. Governments at all levels should establish a standard time limit for the discharge of pollutants by various industries; gradually raise the fees payable for the discharge of pollutants; and ensure that enterprises' pollution control meets the requirements of state and local authorities. Tax, credit, and price preferential treatment should be given to projects which are clearly of benefit to society, including environmental pollution control, comprehensive utilization of waste materials, and nature protection. In absorbing and utilizing foreign funds, it is necessary to include environmental protection projects in any kind of arrangement. In importing foreign

projects, it is necessary to strengthen inspection at the port of entry in order to guard against the shifting of pollutants into our country.

#### **VIII. Make Constant Efforts To Heighten the Nation's Environmental Awareness Through Intensifying Education on Environment**

Environmental awareness is an important indicator of a society's progress and a measure of a nation's civilization. Intensifying publicity and education and making great efforts to heighten the nation's environmental awareness is a long-term task. All propaganda departments, as well as radio and television stations, newspapers, and journals must consider it their important and regular responsibility to publicize the need to protect the environment, and publicize the principles, policies, and regulations of environmental protection, as well as the good and bad examples. Educational and relevant departments at all levels must pay great attention to education on the environment and propagate knowledge about environmental protection in middle schools, primary schools and kindergartens. Specialized courses about environmental protection should be established in universities and colleges. Party schools and cadre-training schools at all levels must also intensify their education on the environment so that our cadres will become more capable of making overall decisions on environmental development.

#### **IX. Improve Environmental Laws and Intensify Environmental Control**

China's experience shows that, when the level of economic development remains relatively low, and when investment in environmental preservation is limited, an effective way to control environmental pollution and ecological damage is to improve administration and intensify control by law. This is also the experience the nation has acquired from following its own ways of protecting the environment. We should also use the experiences of developed countries in "counting on the market to develop the economy, and counting on the government to protect the environment." During the course of restructuring government organs and the economic system, the government's basic role in protecting the environment will become more conspicuous. Therefore, while we must improve and intensify environmental control and improve our efficiency and services, we must not slacken our examination and approval of environmental protection projects. We must earnestly examine our experiences, including problems, gained by implementing the Environmental Protection Law and continue to improve the regulations and upgrade the criteria on this basis. Party and government authorities at all levels must support departments in charge of environmental protection so that they can exercise their supervisory authority according to the law, and so that the law is strictly followed and enforced, and offenders punished. We must continue to promote effective regulations for environmental control so that management of the environment can be intensified in all its aspects.

**X. Draw up China's Action Plan in Accordance With the Guidelines Set by the World Summit of Environment and Development**

The "21st Century Agenda" is an action program for achieving continual development in all regions and countries of the world. This program, which has a bearing on all spheres of national economic and social development, may serve as a useful reference guide for our environment and development. The action plan on environment and development drawn up by the relevant authorities under the sponsorship of the State Council's Environmental Protection Committee will be carried out during the last three years of the Eighth Five-Year Plan and during the Ninth Five-Year Plan after it has been assessed comprehensively.

**Vice Premier Zou Jiahua Calls on World To Save Energy**

*OW2209053892 Beijing XINHUA in English  
0429 GMT 22 Sep 92*

[Text] Madrid, September 21 (XINHUA)—Chinese Vice-Premier Zou Jiahua called on the international community today to save energy by thrift, research and the exploitation of new kinds of energy.

At the 15th International Energy Conference held here, Zou said it was well-known that energy was a basis for the development and subsistence of the human race.

Today human beings were facing global problems of economy, energy and environment. The sustained development and subsistence of mankind were seriously threatened.

Zou said the way energy was obtained and used throughout the world was terribly "unreasonable."

Third World countries rich in energy sent their resources to developed states, which used a large amount of energy.

The developed countries, whose population represented only a fifth of the world population, consumed two-thirds of the world's energy. But Third World countries, whose population made up more than 60 percent of the world population, consumed only 15 percent.

The per capita consumption of energy in the Third World was one-fifteenth of that of the developed world.

Zou said it was estimated that the world population would increase from the present five billion to nine

billion by the year 2050. The growth of population would inevitably raise the demand for energy and the international environment would deteriorate.

So it was vital, Zou said, to take a series of measures, such as reforming the present unreasonable economic system, narrowing the gap in energy consumption between developing and developed countries, improving the global environment and further cooperating in the exploitation and use of energy.

Zou said the demand for generated energy—electricity—would grow sharply when minerals and natural gas were exhausted. So it was very important to accelerate the exploitation of hydroelectric power, nuclear power and generated energy.

Such an approach would mean that the after-effects of energy usage could be controlled, and even that the present situation could be improved.

In order to make the exploitation of energy meet the demands of economic development and environmental protection, Zou urged all countries to act immediately to save energy by curbing the growth of population and furthering international cooperation in the use of energy and the establishment of a new energy order.

Zou said the Chinese Government would continue its policy of exploiting and saving energy while protecting the environment. It encouraged and welcomed investment to tap and make good use of Chinese energy.

Zou, who arrived here with a party on September 14 for a visit at the invitation of the Spanish deputy prime minister, Narcis Serra, left for the Netherlands tonight. During his visit to Spain, King Juan Carlos received him.

**'Serious' Shortage of Timber Reported**

*HK2209104092 Hong Kong ZHONGGUO TONGXUN  
SHE in English 0803 GMT 22 Sep 92*

[Text] Beijing, September 22 (CNS)—According to analysis by the China Association for Timber Circulation, there remains a shortage of timber in China with the shortage acute in some areas.

The serious shortage is because of the increasing demand for timber and its products, with the level of consumption being higher this year than last year and the use of timber for interior decoration and furniture-making continuing to rise. The shortage is especially serious for the large-scale timber business

## AUSTRALIA

**French Minister on Disposal of Australian Toxic Waste***BK1209094292 Melbourne Radio Australia in English 0500 GMT 12 Sep 92*

[Text] There has been another confusing signal from France over the processing of Australian Toxic waste. The French environment minister, Segolene (Royal), now says the decision to allow Australian waste to be disposed off in France applies only to contracts already signed. Robert Bolton reports that this statement comes only a day after the French Government was forced into an embarrassing change of policy on the same issue.

[Begin Bolton recording] The pronouncement means after the current 1,000 tons of waste is destroyed, no more will be accepted for processing. (Royal) said countries like Australia need to dispose off their own waste. Earlier in the week, the minister banned further shipments of Australian PCB's [Polychlorinated Biphenyl], jeopardizing the bulk of the contracted shipment. Later, this ruling was overturned by the French Government. Minister (Royal) made her latest comment at an environment conference where she told delegates treatment of waste has to be carried out in its country of origin. [end recording]

## INDONESIA

**Japan Urged To Stop Plutonium Ship Passing Straits***BK1709134892 Jakarta ANTARA in English 1201 GMT 17 Sep 92*

[Text] Jakarta, Sept 17 (OANA/ANTARA)—Indonesia has urged the Japanese Government to prohibit a Japanese ship carrying plutonium home from European countries to pass the Melacca Straits, said Indonesian Foreign Minister Ali Alatas here on Thursday after signing an agreement on investment protection between Indonesia and Sweden.

He said the ministry's Director of Political Affairs Wiryono Sastrohandoyo had already met Japanese ambassador to Indonesia Michiko Kunihiro to explain the possible danger posed by the ship.

Ali Alatas expressed the hope that the ship, Akatsuki Maru, which left Tokyo last month to fetch the plutonium for energy generation, would use the international waters in carrying home the radioactive matters.

The similar stance has been taken by Malaysia and Singapore.

The three countries have shared the same view that the transportation of plutonium through the busy and narrow straits could pose serious risks to the environment.

## JAPAN

**Tokyo, Beijing To Agree on Coal Desulfurization Proof Test***OW1409130792 Tokyo KYODO in English 1237 GMT 14 Sep 92*

[Text] Tokyo, Sept. 14 (KYODO)—Japan and China will enter into an agreement Wednesday to carry out joint proof tests on desulfurization equipment for coal, officials of the Agency of Natural Resources and energy said Monday.

The tests, aimed at preventing thermal power plants in China from polluting the air with sulfur oxide, is part of Japan's international initiative on the environment and energy, the green aid plan.

The two nations agreed to the plan during International Trade and Industry Minister Koza Watanabe's visit to China in April, the officials of the arm of the Ministry of International Trade and Industry said.

Under the agreement, which runs from fiscal 1992 to fiscal 2000, Japan will provide equipment and technology worth 7.3 billion yen for the tests, they said.

Electric Power Development Co., affiliated with the ministry, will carry out the tests on commission, first in Qingdao in Shandong Province, using a simple desulfurization method, which is expected to cut the sulfur content of coal emissions by 50 to 70 percent, they said.

A test run of the first desulfurization equipment is to begin in fiscal 1994, which starts in April 1994, they said. Details have yet to be decided for the second test, they said.

China has a target of generating up to 240 million kilowatts of electricity in 2000, compared with 127 million kilowatts now, to meet increasing demand, but remains far behind in introducing desulfurization equipment, they said.

**Petroleum Industry Objects to Environment Tax***OW1609094792 Tokyo KYODO in English 0837 GMT 16 Sep 92*

[Text] Tokyo, Sept. 16 (KYODO)—The Petroleum Association of Japan decided Wednesday to oppose the planned introduction of an environment tax in tax revision measures in fiscal 1993, starting next April, association officials said.

The Japanese oil industry organization will shortly submit a petition including the objection to the ruling Liberal Democratic Party and the Finance Ministry.

Introduction of an environment tax has been spotlighted to create a fund to cut carbon dioxide emissions, which are said to be a cause of global warming.

Yasuoki Takeuchi, president of the association and chairman of Nippon Oil Co., said, "the amount of carbon dioxide exhaust from Japan is about five percent of the world's total. We should continue keeping a careful eye on other Western nations' stance on the issue."

The association will also call for the government to lift a temporary tax on gasoline sales and light oil transactions. The five-year tax system will expire next March.

#### **MITI To Ask Companies for Environmental Protection Plans**

*OW1709141992 Tokyo KYODO in English 1359 GMT 17 Sep 92*

[Text] Tokyo, Sept. 17 (KYODO)—The Ministry of International Trade and Industry (MITI) will ask major private companies to draw up "voluntary plans" to protect the global environment, ministry officials said Thursday.

With an ultimate goal of creating a corporate society in harmony with the environment, the plans are expected to include reduction of the use of ozone-depleting chlorofluorocarbons and energy-saving measures, the MITI officials said.

The ministry plans to submit to the next regular Diet session a bill to provide financial and tax-credit support to companies which make efforts to protect the environment, they said.

More than 300 companies will be required to present the plans with specific targets on the introduction of energy-saving facilities and equipment, reduction of chlorofluorocarbons and industrial waste emissions, and recycling, among other goals, the officials said.

Interim targets are to be attained by 1995 and long-term targets by 2000, they added.

The ministry will also call for companies to put voluntary restraints on their overseas activities so as to protect the environment in those regions, they said.

The ministry intends to make the request to companies after a September 28 consultation with a subcommittee set up under a joint conference of the industrial structure council, advisory committee for energy, and industrial technology council, they said.

#### **Environment Agency To Ban 'Cruel' Bear Trapping Method**

*OW1809131192 Tokyo KYODO in English 1223 GMT 18 Sep 92*

[Text] Tokyo, Sept. 18 (KYODO)—The Environment Agency decided Friday to ban a particularly cruel method of trapping bears and to designate Tofutsu Lake in northeast Hokkaido as a wildlife reserve.

The banned trapping method involves placing bait in the middle of a wire loop which tightens, ensnaring the bear when it touches the bait.

Hokkaido brown bears and Asiatic black bears are the most common targets of this trapping method.

Of the 1,000 or so bears captured in Japan in 1990, more than 10 percent were caught in this way.

Hunters sometimes deliberately leave bears for more than a week in the traps to enlarge their gall bladders for use as an ingredient in Chinese-style medicinal compounds.

Residents in Hokkaido also occasionally report sighting bears with feet missing, presumably after the animals have escaped from such traps.

The ban will come into force from the opening of this year's hunting season, but the traps will still be permitted if they are used to capture and destroy injured wildlife.

The newly-designated Tofutsu Lake Wildlife Reserve has an area of about 2,000 hectares and serves as a resting place for migratory birds which reach Japan via the Kuril Islands.

Development in the lake sector of the reserve will in principle be banned. The designation will last 20 years.

The Environment Agency is also considering registering the lake and its vicinity under the Ramsar Convention, an international agreement for the protection of migratory water fowl.

The 61 parties to the convention, which dates from 1971, undertake to designate wetlands and lakes in their countries for the protection of migratory water birds.

Swans and ducks use Tofutsu Lake area between November and April. When the ice floes concentrate off the northern Hokkaido coast in late winter, it is home to the steller's sea eagle and white tailed eagle.

The area is also known for its collections of primeval coastal plant species such as sweetbrier.

In 1988, Hokkaido designated it as a wildlife preserve, but the new national designation will focus attention on the area. An observation platform is already under consideration.

So far, 508 wetlands and lakes regions around the world have been registered with the convention. Japan has three such designated areas.

Japan became a party to the Ramsar Convention in 1980 and will host a major conference of member countries in Kushiro, Hokkaido, in 1992.

A spokesman for the agency said the agency would consider registering the area with the Ramsar Convention if local residents favor the idea, but added that Kutcharo Lake in the north of Hokkaido already has

such a designation. Kutcharo Lake serves as a staging place for migratory birds from Sakhalin.

The agency also announced it will extend by five years a ban on the capture of two species of female pheasants.

### **Oil Industry Sets Up First Joint Research Institute**

*OW1809094892 Tokyo KYODO in English 0831 GMT 18 Sep 92*

[Text] Chiba, Sept. 18 (KYODO)—Japanese oil refiners and wholesalers Friday launched their first joint research facility to study such issues as environmental problems concerning petroleum.

The Petroleum Industry Technology and Research Institute, pooling the 26 member companies of the Petroleum Association of Japan, marked the completion of the research facility in Toke, Chiba Prefecture.

The 37,000-square-meter Toke facility is aimed at developing environmentally benign fuels, such as less-polluting diesel fuel and high-efficiency gasoline, and widening application of petroleum to such areas as fuel cells.

### **Work Begins To Dismantle Nuclear Ship's Reactor**

*OW1809065592 Tokyo KYODO in English 0457 GMT 18 Sep 92*

[Text] Aomori, Sept. 18 (KYODO)—The Japan Atomic Energy Research Institute on Friday launched an operation to dismantle the reactor of Japan's first and only nuclear-powered ship.

The institute plans to remove the reactor from the ship, now berthed at Sekinehama port in Mutsu, Aomori Prefecture, and display it for the general public in a new facility to be constructed at the port.

Operations are scheduled to be completed around the end of 1995 and with the expense of the new facility included will cost some 9.5 billion yen.

The body of the ship is scheduled for billions of yen worth of refurbishing and by about 1997 will be among the world's largest sea-going cruise vessels, officials said.

On Friday, a ceremony was held at the port for the safety of operations, and equipment to be used in the dismantling were brought on board.

The 8,242-ton Mutsu experienced reactor trouble on its maiden voyage in 1974, leaking radiation. After the accident, the Mutsu's home port was moved to Sekinehama from Ominato, also in Aomori Prefecture, following strong protests from local fishermen and residents.

All trials of the ship were completed last year.

According to the institute, actual dismantling operations will begin September 24 when the water in the bottom of the ship to cover the radiation emitted by the reactor during operation will start to be removed.

In early October, an 180-ton, 13-meter-high steel room will be constructed in the room directly above the reactor. After that, the room will be sealed tightly to prevent the escape of radiation to the outside.

Spent nuclear fuel will be removed from the reactor by opening the lid of the reactor container next spring. Around the summer of 1995, the Mutsu will be loaded onto a platform where the body of the vessel will be sliced into three and the reactor removed.

### **Safety Accord Signed on Low-Level Radioactive Waste Site**

*OW2109032192 Tokyo KYODO in English 0310 GMT 21 Sep 92*

[Text] Aomori, Sept. 21 (KYODO)—An accord on safety procedures signed here Monday gives the green light to Japan's first low-level radioactive waste storage center to begin operations in December.

The accord on the waste storage site located in the village of Rokkasho, Aomori Prefecture, was signed by the Rokkasho village authorities, the prefectural government, and Japan Nuclear Fuel Ltd., which will operate the nuclear waste center.

The accord stipulates that the village and prefectural governments will have the right to conduct on-the-spot inspections at the center whenever they consider such inspections necessary.

The agreement with 23 articles and detailed regulations also guarantees the local and prefectural governments the right to demand the suspension of nuclear waste acceptance to ensure the safety of local residents, officials said.

Although there is no legal obligation to draw up a safety accord on nuclear facilities between the operating company and local authorities, the accord was reached as the Rokkasho and Aomori prefectural bodies insisted on their right to carry out safety checks, the officials said.

The Rokkasho nuclear fuel recycling complex consists of three key facilities—a uranium enrichment plant, the low-level nuclear waste storage center, and a planned reprocessing plant for spent nuclear fuel.

Local residents have expressed concern about the safety of the nuclear complex.

In July last year, the Rokkasho village government, the Aomori prefectural government, and Japan Nuclear Fuel signed a similar safety accord on the uranium enrichment plant.



The construction of the nuclear waste storage site started in November 1990 and its total cost is estimated at 160 billion yen.

The construction is scheduled to complete in November.

The center will take 25,000 to 50,000 200-liter drums of low-level radioactive waste every year from nuclear power plants throughout Japan.

The site is planned to hold a total of three million 200-liter drums and will control the waste for the next 300 hundred years, the officials said.

## NORTH KOREA

### Daily Stresses Environmental Dangers of Shipping Plutonium

SK1909121492 *Pyongyang KCNA in English*  
1000 GMT 19 Sep 92

[Text] Pyongyang September 19 (KCNA)—MINJU CHOSON today dedicates an article to the maritime day of the world.

It says:

Many problems should be solved to protect sea environment.

Capitalist countries are to blame for destroying sea environment.

Japan is now promoting the operation to transport a large quantity of plutonium by sea.

If this plutonium is leaked out on the way of transport, the world as well as the sea will be extensively damaged.

Japan's sea transport of plutonium, part of its moves to become a nuclear power, should not be permitted.

The Democratic People's Republic of Korea is paying great attention to the protection of sea environment.

In the DPRK the environmental protection law has been instituted and the protection of sea environment is legally guaranteed.

## MALAYSIA

### ASEAN Support Sought Over Japanese Plutonium Ship

BK1709080692 *Kuala Lumpur BERNAMA in English*  
0709 GMT 17 Sep 92

[Text] Kuala Lumpur, Sept 17 (OANA-BERNAMA)—Malaysia said it will seek the support of its ASEAN partners to persuade the Japanese Government against using the Straits of Melaka for the transport of a cargo of plutonium.

Science, Technology, and Environment Minister Law Hieng Ding said Malaysia would raise the matter at the two-day ASEAN science and technology ministerial meeting beginning in Singapore on Monday.

"I will bring up the matter at the meeting so that a consensus can be reached to ask the ship to use another route," he told reporters after delivering a keynote address on the fourth day of the five-day 13th international congress of the Eastern Regional Organisation for Planning and Housing (EAROPH) here Thursday.

It has been reported that the Japanese vessel, Akatsuki Maru, may use the Straits of Melaka to carry a tonne of weapons-grade plutonium from France to Yokohama in November for use by Japan's conventional nuclear reactors to generate electricity.

Law said he would first write to his counterparts in the other five ASEAN countries explaining Malaysia's stand on the matter in a bid to garner their support.

The Straits of Melaka has three ASEAN countries - Malaysia, Indonesia, and Singapore - as the littoral states.

The ministry, on a directive of the cabinet Wednesday, has set up a committee comprising six government agencies to monitor the movement of the Japanese ship.

The committee is headed by the Atomic Energy Licensing Board and has as members the Nuclear Energy Unit, the Department of Environment, the Marine Department, the Attorney General's chambers, and the Foreign Ministry.

## PHILIPPINES

### Senator Says Illegal Logging Destroyed Virgin Forests

HK1409100392 *Manila DWIZ Voice of the Filipino People's Radio in Tagalog* 2200 GMT 13 Sep 92

[Text] There are now only 7,000 hectares of virgin forests remaining in the country, out of its original 90 million hectares.

In his speech before students of the Angeles University in Pampanga, Senator Orlando Mercado said illegal loggers have destroyed the forests in Central Luzon, which is why there are no more beautiful forests left in the area, aside from those cared for and left by the Americans inside the Subic base in Zambales.

Mercado said illegal loggers gained \$14 billion in exchange for the destruction of the environment. Mercado added that if the continuous destruction of the environment lasts until the year 2000, the Philippines will no longer be able to restore its original beauty, no matter how intense rehabilitation efforts by various sectors of society are.

## SINGAPORE

**Government Balances Environment, Economic Demands**

BK1209045792 Singapore *THE STRAITS TIMES*  
in English 10 Sep 92 p 16

[By Eileen Lau]

[Text] Singapore is Number One in environmental management in southeast Asia.

An environmental report on 12 Asian countries released yesterday said the Singapore Government was more successful than most in balancing the often conflicting demands of environmental protection and economic development.

But the report said the challenge now was to "win the hearts and minds" of Singaporeans, who are still apathetic to "green" issues.

The 400 page report, entitled Asia/Pacific and the Environment: Investing in the Future, was also released yesterday in the other 11 countries—Malaysia Indonesia, Thailand the Philippines, Australia, India, Japan, Hongkong, South Korea, Taiwan and China.

The US\$80,000 (S\$126,400) study was conducted by Business International, the research arm of THE ECONOMIST, based on interviews with over 200 business leaders, government officials, academicians and representatives from other organisations in the countries surveyed.

Commissioned by corporate giant Du Pont and public relations firm Burson-Marsteller, it identified challenges facing each country and suggested initiatives to tackle them.

Costing US\$500 a copy, it is aimed at stimulating discussion among business, government and the public on environmental issues.

The chapter on Singapore said: "It does not have Hongkong's filthy harbour, the rubbish strewn streets of Manila, or the traffic jams of Bangkok." It added that it had been easier for Singapore to implement anti-pollution policies and stricter controls over its industry because the authorities had strong political support from the beginning.

Its small size and absence of large areas of rainforests and mineral resources that needed protection have also helped. The report praised Singapore's Green Plan, an environmental blueprint intended to turn the country into a "model green city" by the year 2000.

But it pointed out that littering, hazardous waste management and competition for scarce land were areas that needed attention.

Burson-Marsteller managing director Paul Walker said that public interest in environmental issues was low

because Singaporeans still had "the mentality that someone else namely the Government, will take care of it for them."

The report also said littering was still a problem despite steep fines and public education. Also, recycling efforts have not met with much success.

## THAILAND

**Burmese Government Threatens Logging Embargo**

BK1809054892 Bangkok *THE NATION* in English  
18 Sep 92 p 16

[Text] Log importers have warned that the Burmese government might embargo all log imports to Thailand if Thai exporters fail to follow Burmese requirements. The warning from importers came after reports that the Burmese government asked all Thai log importers to have certificates of origin before bringing logs out of the country.

The requirement is aimed at controlling log exports and also as a preparation to stop granting new forest concessions to the private sector from the end of next year, according to a Thai log importer.

Certificates of origin would not be a problem for companies which already have concessions with the Burmese government, said an importer from Thai Phong Sawmill Co Ltd. However, he warned that smaller importers who buy logs along the Burmese border might go out of business since it would be difficult for them to get the certificates.

The Burmese government wants to preserve its natural resources and it might take the opportunity to ban all log exports if Thai exporters continue to conduct the illegal trade, he added.

A log importer from another company expects that the Burmese government will send officials to the border to issue the certificates, as it did in the past. In addition, the Burmese Embassy in Thailand can also issue them.

**Environment Called 'Vital Issue' for New Government**

BK2009033392 Bangkok *THE NATION* in English  
20 Sep 92 p A10

[Editorial: "Environment Must Be Top Priority for Chuan's Government"]

[Text] While the status of the environment was hardly mentioned at all on a national level during the election campaign, the new government however should be in no doubt that it has become a vital issue in the country. A recent survey, for instance, found that fully 80 percent of affluent Thais believe less pollution would do more to improve their lifestyle than anything else, such as having more leisure time or owning a bigger house.

The rural poor may argue more strongly for higher income, but they actually suffer more than urban residents do from environmental neglect, epitomized by deforestation and polluted waterways. In short, Democrat leader Chuan Likphai (assuming he becomes the new PM) should heed the recently concluded Earth Summit's message that economic growth must take into account environmental concerns if it is to be sustainable.

This reminder is necessary because the new administration will be pushing for growth in order to restore confidence in the economy following the May Massacre. And frankly speaking, despite their "angelic" reputation, the pro-democracy parties' record on the environment is not a good one. In fact, all the parties up for election essentially follow the National Economic and Social Development Board's (NESDB) policy, which has brought us to the mess we are in today.

The Democrats, for instance, have favoured building dams at Kaeng Krung and Kaeng Sua Ten. And environmental decay is rife in their southern stronghold: mass tourism facilities, aquaculture farms and rapacious fishing fleets have been allowed to operate with virtually no regulation whatsoever. Arsenic leached from tin mines in Nakhon Si Thammarat is contaminating water supplies and poisoning villagers. In Chuan's own base province of Trang, local officials look the other way while large trawlers sweep within the prohibited three-kilometre limit from shore, destroying the livelihood of local fisherman and the habitats of endangered sea turtles.

The Phalang Tham Party has presided over the Bangkok Municipal Authority during a time in which pollution and traffic problems have grown ever more severe, though admittedly its power to correct the situation has been limited. And New Aspiration Party's leader Gen Chawalit Yongchaiyut is notorious for his connections with the logging industry: he's not called "Mr Timber" for nothing.

The first priority of any new administration should be to appoint a tough and activist Minister of Science, Technology and Environment, someone who is not afraid to speak out against the powerful vested interests within the bureaucracy and the private sector which would like to carry on business as usual. Support should come in the form of a healthy addition to the Environment Fund and strong prime ministerial backing in Cabinet meetings.

The environmental issues to be faced by the next administration are many and varied. But they reflect a common agenda: Thailand must stop taking its precious natural resources for granted.

The continuing water shortage, which has received a good deal of attention, is a good example. Policy-makers tend to focus on "all that water running off into the sea unused" and offer large-scale "solutions" such as dams, which are popular because they are highly visible and provide officials with kickbacks.

In fact, with all the forest destruction, social displacement and general controversy they cause, dams are no solution whatsoever. Instead, planners should investigate small-scale alternatives (such as weirs) or innovative ones (such as building underground reservoirs) to increase supply. At the same time, though, it should look at the demand side: reforming the price structure for water consumption to reflect its true costs would dramatically boost efficiency, which is now pitiful. Giving farmers water rights would also give them incentive to use the resource more wisely, help prevent water grabs by thirsty cities and golf courses, and allow them to benefit from development should they choose to sell or lease their rights.

Demand-side management also deserves more emphasis when it comes to power generation. The government is currently planning to invest Bt5 billion over five years in promoting energy efficiency, a cheap and environmentally friendly "source" of power. Doubling this budget should double the gains, but it would be still pale in comparison to the Bt250 billion allocated for increasing supply.

The next administration should also preside over a public debate on nuclear power; that is, first make sure there is one, and then ensure it is open, free and fair, with all views represented.

Reforestation is another tricky issue to be faced. The latest policy of the Anan II administration, designed to replace the infamous kho chon ko [land resettlement] programme, had seemed promising. It endorses seeking the cooperation, rather than the resettlement, of local villagers for commercial reforestation projects, along with radical reform of the Royal Forestry Department, changing it from an organization dedicated to logging to one intent on conservation.

But we are disappointed by the first project (financed by the Soon Hua Seng Group) to be approved under the policy, since it will not plant diverse species of native trees as the plan encouraged. Community forestry is still the way to go.

Residing in Bangkok, government officials will no doubt be fully aware of the many urban environmental problems we face. To help solve them, a series of new laws recently passed should be fully implemented in order to crack down on polluters. Bringing in third-party environmental auditors to help shore up regulatory enforcement is especially important.

It's time also to begin the long and difficult process of cleaning up our dying "mother water", the Chao Phraya. For air pollution, tough new emission standards should be put in place. And to halt the illicit dumping of hazardous waste, allocate enough money to make sure that proposed treatment centres are safe and sufficient.

Most importantly of all, make sure that it is the polluters who pay for these measures. Only then will they have an incentive to stop fouling the environment and actually



prevent pollution. This should be our ultimate goal, and it is not as hard to meet as most businessmen think.

For the long term, the government should move ahead with its plans on decentralization: local people have a natural incentive to protect their local environment, if only they had the power to do so. A good place to begin is on Ko Si Chang, where the government should go ahead with the proposed referendum to see whether the islanders favour the development of a deep sea port there.

The environmental agenda certainly looks like an extensive one. This is due to the fact that issues affecting the environment in the country have been neglected for so long. Despite the promising outlook for the new government, its honeymoon on taking up environmental issues will be short. Let's hope those halos don't become all covered with soot.

#### **Deforestation Occurring at 'Breakneck Speed'**

*BK2209025592 Bangkok THE NATION in English  
22 Sep 92 p B3*

[Text] Deforestation threatens to destroy Cambodia economically and ecologically "at a breakneck speed", according to Dr Chem Widhya, a specialist in international relations attached to the Supreme National Council in Phnom Penh. At a conference in Bangkok he said that the country's forest resources have drastically reduced from 13 million hectares (73 percent of Cambodia's total land) in the 1960s to seven million hectares (39.3 percent) now.

"Cambodia has one of the highest per capita rates of deforestation in the world," Widhya said.

According to a United Nations Development Programme [UNDP] study all Cambodian factions are involved in timber trade. The State of Cambodia is the main timber exporter. It signed eight logging concessions totalling 320,000 cubic metres of timber. The Khmer Rouge is the second largest exporter, selling 200,000

cubic metres of wood to Thailand. The other two factions, FUNCINPEC [National United Front for an Independent, Neutral, Peaceful, and Cooperative Cambodia] and the KPNLF [Khmer People's National Liberation Front] exported 128,000 and 50,000 cubic metres respectively. In addition illegal exports to Vietnam reached 250,000 cubic metres and to Thailand via Laos 200,000 cubic metres. In 1992 timber exports will amount to 1,148,000 cubic metres according to the UNDP study.

The deployment of UN civilian and military personnel and the arrival of foreign businessmen has led to a construction boom, which increases domestic demand as well, Widhya said. The wood is used for different kinds of timber products including furniture. Wood processing mills have been created to meet the new demand. The UNDP estimates that the total production of timber in Cambodia will reach two million cubic metres this year.

The effects of logging on the environment are devastating. Widhya said it has led to soil erosion.

#### **VIETNAM**

##### **Forestry Development Conference Held**

*BK0909150992 Hanoi VNA in English 1425 GMT  
9 Sep 92*

[Text] Hanoi VNA Sept. 9—An international conference on forestry development in Vietnam was opened here yesterday with the participation of representatives of the World Bank (WB), the Asian Development Bank (ADB), UNDP [United Nations Development Program], FAO [UN Food and Agriculture Organization], PAM [expansion unknown], the embassies of France, Germany, Japan, Holland, Russia, Sweden, Finland, the International Institute of Environment and Development, etc.

Vice Chairman of the Council of Ministers Tran Duc Luong delivered the opening address. At the conference, Vietnam introduced four programmes on forest preservation and development. The foreign delegates will make field trips to a number of localities.

## ALBANIA

### Health Official Sees Pollution as 'Embarrassing' Problem

AU1209135892 Tirana ATA in English 0810 GMT  
12 Sep 92

[Text] Tirana, September 12 (ATA)—In an interview with the newspaper RILINDJA DEMOKRATIKE, the deputy minister of health and environmental protection, Besim Nuri, said among other things that the environmental pollution, particularly in the major cities, is a very embarrassing problem.

This situation, the deputy minister says, is inherited from the past. The lack of the means to gather the wastes, the numerous private constructions without criteria and permission in the center of the cities, the building wastes, etc., have led to such an environmental pollution. This unsatisfactory situation influences directly in the health of the population, in the spread of infective and parasitic diseases.

The interview points out that the draft law on the sanitary control, to be soon submitted to the government, is drafted. It envisages severe sanctions against infringers down to penal prosecution.

## BULGARIA

### Ecological Session With Romania Ends in Disagreement

AU0909115492 Sofia BTA in English 1055 GMT  
9 Sep 92

[Text] Silistra, September 9 (BTA)—The latest session of the Bulgarian-Romanian Joint Environmental Commission ended late last night in the Romanian city of Calarasi. The Romanian side was presented detailed information on the plants in Silistra which are potential air and water polluters. Within a week the Bulgarian side is to receive similar information on the Romanian plants. The session, however, failed to achieve complete agreement on the way air pollution should be measured. The proposal made by the Bulgarian delegation to monitor pollution in the enterprises themselves provoked some contradictions. The Romanian side will have to coordinate this problem with the higher instances, journalists were told.

One of the reasons for the disagreement of the Romanian experts on the taking of measurements in the enterprises was the lack of suitable equipment. The session also discussed "some current issues in connection with the environmental situation in the region of Silistra and the Romanian city of Calarasi," but no further details were given.

The next session of the Bulgarian-Romanian Joint Environmental Commission has been scheduled to be held on October 13 in Silistra. Its preliminary agenda envisages

the determination of the sites, methods, indicators and equipment of the measurements.

## CZECHOSLOVAKIA

### Electricity Produced for First Time at Gabcikovo

AU0909081992 Bratislava PRAVDA in Slovak 4 Sep 92  
p 1

[TK SR report: "The First Electricity From Gabcikovo"]

[Text] Bratislava—One of the Gabcikovo hydro project's eight turbines supplied the distribution network with electricity for the first time yesterday. The turbine, with an output of 90 megawatt hours, is now capable of constantly supplying electricity as long as there is enough water in the feeding canal. However, to guarantee this it is necessary to dam the Danube near Cilistovo where equipment that makes it possible to keep the water at the necessary level has been constructed. According to a Slovak Television report, this project should be implemented in mid-October. The next step will involve ensuring the passage of river traffic along the feeding canal. It should be possible to put another three turbines into operation this year.

### Data for Investments in Environmental Projects Examined

92CH0870A Prague EKONOM in Czech No 31, 1992  
pp 24-25

[Article by Stanislav Palas: "How Much Shall We Invest in the Environment?"]

[Text] The accumulated problems in the sphere of ecology make our country one with some of the worst environmental conditions in Europe. Improving this situation will therefore be a costly and time-consuming process.

The statistics for capital investments have been systematically tracking the means expended on capital construction in the area of environmental protection since 1981 under the program for specifically targeted construction projects. The data are collected separately for construction projects realized for:

- Protection of clean water.
- Protection of clean air.
- Use and disposal of waste.
- Soil reclamation needed because of mining activity, waste dumps, and scrap yards.
- Former government goal-oriented program 12—creation and protection of the environment (since 1991, this has not been tracked as a separate group).

We can document an overall progressive trend in investment expenditures for environmental protection by data collected since 1981:

- From 1981 to 1985, expenditures for environmental protection amounted to a total of 8.9 billion Czechoslovak korunas [Kcs] (1.14 percent of the entire volume of investments); 65.2 percent of that amount went to clean water actions, 18.0 to clean air actions, and 16.8 for actions involving the use and disposal of waste.
- From 1986 to 1990 Kcs25.6 billion (2.81 percent of the total volume of investments) already was used for environmental protection. In the year 1990 alone the volume of these investments was Kcs8.8 billion and its share in the total investments reached 4.3 percent. During these years, most of these investments were again used for the protection of clean water—about Kcs14.5 billion (56 percent), less for the protection of clean air—Kcs4.7 billion (18.1 percent) and for the use and disposal of waste—Kcs3.9 billion (15.1 percent). The rest of the ecologically directed investments were made under the former state goal-oriented program for the creation and protection of the environment.
- The expended investment work and supplies in 1991 amounted to Kcs14.6 billion, and thus represent the greatest share thus far in the total of investments that was ever reached, that is, 7.6 percent. Even though the year 1991 was characterized by a marked decline in the total volume of investments (by about 36 percent) in comparison to the previous year, the volume of investments for environmental protection rose by 8.3 points, mainly as a result of the increased investments in the Slovak Republic.

The structure of the investments from the standpoint of targeting the areas we have been keeping under review is beginning to change. Although in 1991 the investments for the protection of clean water were predominant—Kcs7.2 billion (49-percent share in the total investments), Kcs5.4 billion (37 percent) was spent for the protection of clean air, which represents a significant increase of investments for this area—the increase was a full 9.8 points in comparison to 1990. The least was spent on investments for the use and disposal of waste—Kcs1.8 billion (12 percent) and for soil reclamation—Kcs232 million (2 percent).

#### Construction Projects for Environmental Protection

Besides the overall data on investments for the environment, statistics are keeping track, by means of the so-called construction register, of individual construction projects for the protection of the environment with budgeted costs of more than Kcs5 million.

This group of construction projects is a sufficiently representative selection which makes it possible to reach general conclusions for the entire sphere of capital construction for environmental protection, because construction projects in the construction register comprise about an 80-percent share of the entire national economy (measured by the share of budgeted costs).

The level of investments in the Czech Republic in 1991 stayed roughly at the same level as in 1990. There are,

however, differences among the individual krajs: On the one hand, the greatest drop in investments is noted in the South Bohemian Kraj (by about Kcs450 million) and in the North Bohemian Kraj (by about Kcs200 million), but on the other hand the North Moravian Kraj shows an increase in the expended investment work and supplies (by Kcs500 million).

In the Slovak Republic the range of changes in the amount of expended investments is influenced considerably by the increase by almost Kcs1.4 billion in the Central Slovakian Kraj. The high investments in this kraj are the result of the inclusion of the construction project connected with the modernization of the aluminum works in Ziar nad Hronom, where a sum of almost Kcs1.3 billion is involved. That is also the main reason why the share of investments in the Slovak Republic grew so markedly (by 7.5 points) in comparison to the Czech Republic.

As far as the flow of investment into the individual most affected areas of CSFR are concerned, priority is given to the North Bohemian Kraj (with a share of 12 percent for CSFR) and the North Moravian Kraj (with a share of 13 percent for CSFR). Somewhat behind expectations is Prague, which is comparable to the North Bohemian Kraj as far as environmental pollution is concerned, but, of course, investments here represent only 6 percent of the total investments in CSFR.

Both extremes, as far as the distribution of investments by krajs within the framework of CSFR is concerned, appear in the Slovak Republic. Because of the investments in the Ziar Basin, the 23 percent of the Central Slovakian Kraj represents the absolute highest share for CSFR; on the other hand, the situation in Bratislava, where investments do not reach even 3 percent (2.6 percent) of the share for CSFR, looks unsatisfactory.

Since 1986, the number of completed construction projects has been increasing, with small fluctuations. On the average, 38 construction projects with average budgeted costs of Kcs1.9 billion were in the process of being completed in 1991, and 88 construction project with budgeted costs of Kcs2.9 billion were completed in 1991 (which represents the absolutely highest number of construction projects that was ever completed in the course of one year). Predominating among the finished construction projects are constructions for the protection of clean water (altogether 50 construction projects in the amount of Kcs1.8 billion). Construction projects for clean air actions as well as construction projects for the use and disposal of waste are roughly at the level of one-third of this volume.

Data on construction work begun in 1991 confirm an increased activity and a far more progressive trend than is the case in construction projects that are in the process of being completed. In 1991, 134 construction projects were started with total budgeted costs of Kcs9.2 billion (in 1990 there were 138 construction projects with

budgeted costs of Kcs9.1 billion). Even in the construction projects being started there is a predominance of construction work for the protection of clean water, of which 73 with budgeted costs of Kcs4.8 billion were started. In 1990 as well as 1991 there was a significant

increase in construction starts for the protection of clean air—32 were started with budgeted costs of Kcs2 billion in 1990, in 1991 there were 37 with budgeted costs of Kcs3 billion.

**Expended Construction Work And Supplies in Kcs Million (in 1991 prices)**

Republic	Total			For Environmental Protection		
	1990	1991	Index	1990	1991	Index
CSFR	299,356	191,527	64.0	13,527	14,643	106.3
CR	203,118	128,525	63.3	9,436	9,376	99.4
SR	96,238	63,002	65.5	4,091	5,267	128.7

**Completion of Ecological Construction Projects**

The development of investments in 1992 and in the following years will depend primarily on securing sufficient financial means—whether they created in CSFR or obtained from abroad—for financing ecological construction work. On the basis of data on projects under construction at the end of 1991, we can characterize the starting situation for 1992 and attempt to estimate the progress of completing these ecological projects.

On 1 January 1992, there were 532 projects under construction with budgeted costs in the amount of Kcs48.8 billion. The remainder of the budgeted costs for these construction projects represents the amount of Kcs27.2 billion, which means that 55.7 percent of the costs still remain to be used up in these construction projects. Assuming the same intensity of investments as in 1991 (Kcs10.9 billion a year) this remainder, adjusted by the impact of price liberalization, theoretically represents enough work for 3.5 years.

As far as financing these projects is concerned, 23.6 percent comes from the investors' own resources, 10 percent from loans, and 47 percent from grants from state funds and the state budget. We can therefore estimate that in order to finish the projects under construction the investors will request state financing in the amount of about Kcs16.5 billion.

As far as targeting these capital constructions is concerned, in 1992 projects for the protection of clean water predominate with a 59-percent share of all ecological constructions. An upward trend is noted in constructions for the protection of clean air. On 1 January 1991, the

share of these constructions rose by 7.7 points in comparison to the previous year (with a large share in the Slovak Republic—increase of 5 points), on 1 January 1992 this increase was 5 points (in contrast with a large share in the Czech Republic—increase by 5.3 points). In the case of constructions for the use and disposal of waste, the situation remains roughly at the level of previous years (decline by 0.4 points).

As far as territorial distribution of these construction projects is concerned, the greatest increase by 7 points in contrast to 1 January 1991 is registered in the North Moravian Kraj as well as in the increase of the Czech Republic share by 4.3 points in comparison to the Slovak Republic, so that constructions in the Czech Republic represent almost 66 percent of the total CSFR expenditures. In the most affected regions the situation in capital construction is not improving.

Neither is the situation improving as far as the expected completion of the construction projects is concerned. Even though in 1991 there were 88 construction projects completed at the cost of Kcs2.9 billion, the practice of postponing the completion of the construction to later years continues. The structure of projects under construction according to assumed times of completion shows how unrealistic were the projections expressed by investors at the end of 1991. After all, in 1992 alone there should be 231 construction projects completed for Kcs14.8 billion. If we add to this the construction projects that still remain unfinished from previous years, we arrive at an entirely unrealistic assumption. Putting ecological capacities into operation will therefore be certainly postponed, naturally depending on the financial resources created for these construction projects. Unless there is a radical change, then just finishing all the projects under construction (without starting new ones) will go on until 1995.

**Summary of Expended Investment Work and Supplies For Environmental Protection Construction Projects**

Kraj And Place of Construction	Total Executed Investment Work And Supplies (in Kcs million; 1991 prices)			Share of Individual Kraj's in Total Investments (in percent)		
	1990	1991	Difference (1991-92)	1990	1991	Difference (1991-92)
Prague	635	684	49	6.46	6.34	- 0.12
Central Bohemian Kraj	532	476	- 56	5.41	4.41	- 1.00
South Bohemian Kraj	947	493	- 454	9.63	4.84	- 5.07

**Summary of Expended Investment Work and Supplies For Environmental Protection Construction Projects (Continued)**

Kraj And Place of Construction	Total Executed Investment Work And Supplies (in Kcs million; 1991 prices)			Share of Individual Krajs in Total Investments (in percent)		
	1990	1991	Difference (1991-92)	1990	1991	Difference (1991-92)
West Bohemian Kraj	362	523	161	3.68	4.84	1.16
North Bohemian Kraj	1,533	1,291	- 242	15.60	11.96	- 3.64
East Bohemian Kraj	1,011	908	- 103	10.29	8.41	- 1.88
South Moravian Kraj	760	750	- 10	7.73	6.95	- 0.79
North Moravian Kraj	924	1,430	506	9.40	13.25	3.84
Czech Republic Total	6,704	556	- 149	68.21	60.72	- 7.49
Bratislava	353	284	- 69	3.59	2.63	- 96
West Slovakian Kraj	507	537	30	5.16	4.97	- 18
Central Slovakian Kraj	1,161	2,531	1,370	11.81	23.44	11.63
East Slovakian Kraj	1,104	889	- 215	11.23	8.23	- 3.00
Slovak Republic Total	3,125	4,241	1,116	31.79	39.28	7.40
CSFR Total	9,829	10,796	967	—	—	—

Information about capital construction with an ecological goal represents only one of the partial aspects of solving these problems. Capital investment is and always will be one of the most important indicators expressing the activities leading to the correction of the poor condition of the environment. That is why I consider it important to know the development of investments in this area for the past several years.

For the longer term, it is important that the volume of investments for the protection of the environment be constantly increasing. The increase of 8.3 points in 1991 is particularly significant considering the overall decline of investments in the total national economy (by about 36 percent).

During the past two years there has been a noticeable increase in the share of the very much needed construction projects for the protection of clean air (in 1990 by 7.7 points, and in 1991 by 5 points), and the next most numerous construction projects either under construction or planned are those for the protection of clean water (59 percent). Since 1990 there has been a decline of 1.6 points in the number of construction projects for the use and disposal of waste.

From the territorial point of view, the Czech Republic has a 68-percent share of the total ecological capital investments, the Slovak Republic 32 percent. Most of the means (calculated by the share in CSFR) in the Czech Republic is directed to the North Bohemian Kraj (about 13 percent) and the North Moravian Kraj (about 14 percent), in the Slovak Republic explicitly to the Central Slovakian Kraj (about 21 percent). Prague and Bratislava are not treated preferentially from the point of view of investment expenditures, and are placed at the level of other krajs with far better environmental conditions.

The key problem of further capital investments for environmental protection are financial resources. Whether we shall be able to create sufficient resources ourselves is hard to predict today. If means are going to be found at the same rate as at present, a significant improvement in the condition of the environment by the end of the century will be a very difficult task. Means must therefore be found now, either in the form of international loans or domestic credit. A resolute approach is called for, but so far the developments in capital investments do not show that resoluteness.



## ANTIGUA AND BARBUDA

### Environmental Group Calls for National Development Plan

*FL1009221392 Bridgetown CANA in English  
1932 GMT 10 Sep 92*

[Text] St. John's, Antigua, Sept. 10 (CANA)—Antigua and Barbuda's Environmental Awareness Group (EAG) has called on the government to produce a comprehensive national development plan "which will allocate land use for agricultural, industrial, tourism, and other purposes on a rational basis." The group said the development plan should be done in consultation with the public.

The call followed the government's decision not to proceed with plans to move the West Indies Oil Refinery's terminal complex from just outside St. John's, the capital, to the southern part of the island. In expressing "relief" over the government's decision, the EAG said "ad hoc development without concern for other sectors of the economy or long-term sustainability, serves only to enrich the few and deprive the country of its future."

It said the proposal to move the facility was "ill-conceived as it could have had disastrous consequences for the whole country." Listed among the potential harmful effects of the relocation—the destruction of prime agricultural land, damage to the fishing and tourism industries, and an increase in the risk of a major oil spill in Antiguan waters.

### Government Urged To Stop U.S. Navy From Dynamiting Reefs

*FL1209015392 Bridgetown CANA in English  
1638 GMT 11 Sep 92*

[Text] St. John's, Antigua, Sept. 11 (CANA) - Chairman of the private sector organisation, Brian Gonsalves, on Friday called on the government here "to take immediate action to stop" the U.S. naval facility from "dredging and dynamiting" reefs on Antigua's north coast. In a statement, Gonsalves said that the naval base "is in the process of constructing a pier off the point of land they occupy, which is located towards the eastern end of the Jabblerock Beach."

He said he had contacted the local Development Control Authority (DCA) and was informed that "they were not consulted on the matter, as would normally be required." The businessman said the minister of economic development had been "unable to say who had given the U.S. Navy approval" to carry out the work.

Gonsalves said he has also contacted the U.S. charge d'affaires and was "assured that a copy of (an) environmental study would be supplied to (the Ministry of) External Affairs (but) to-date, it has not been done."

He said "approximately 150 dynamite charges, each varying between 10 and 15 pounds, would be set off early

next week in order to remove portions of reef." Gonsalves said the navy's plans "will result in damaging not only the reefs but also killing an abundance of marine life."

"The Government of Antigua needs to take immediate action to stop what could be wanton destruction of our coastline by the U.S. Government or it will be too late, and irreversible damage may be done," he said.

## ARGENTINA

### Government Voices Concern Over Japanese Ship Loaded With Plutonium

*PY1809173892 Madrid EFE in Spanish 2108 GMT  
17 Sep 92*

[Text] Buenos Aires, 17 Sep (TELAM)—The Argentine Government today voiced its concern over the possible harm the Japanese ship Akatsuki Maru, loaded with plutonium, may cause to people and the environment in passing by the Argentine coast.

This was reported by the Foreign Ministry, which stated that the appropriate information is being requested from the Japanese, French, and U.S. Governments through the corresponding diplomatic channels in order to evaluate the events and determine the appropriate action to be taken.

According to an official communique, the United States was asked to provide information because "this country supplied the raw material."

The communique says that in light of similar concern expressed by the Brazilian and Chilean Governments, "contacts have been established with these countries" to coordinate actions intended to prevent any risk this ship may pose.

It states that the Argentine Government "will demand strict compliance with international laws."

### Menem Lauds 'Eco-Friendly' Industry

*PY2009221592 Buenos Aires BUENOS AIRES  
HERALD in English 19 Sep 92 p 11*

[Excerpt] Bahia Blanca (NA-DYN/CAP)—President Carlos Menem yesterday presided over the inauguration of the new industrial effluents treatment plant built by the oil company Isaura in their premises near this city.

In a brief speech Menem urged industrialists to adopt eco-friendly systems in their companies in order to appease environmental groups "which reject any kind of industry in their fanatic defence of ecology."

After pointing out that in his opinion "industry and ecology are not incompatible," the head of state warned his government would be "inflexible" with companies which do not comply with environmental regulations.

**Buenos Aires Police Inaugurate 'Eco-Police' Department**

PY2009232692 Buenos Aires *BUENOS AIRES HERALD* in English 19 Sep 92 p 9

[From the "Ecology Briefs" rubric]

[Text] (DYN)—Changing times: Last Tuesday the Buenos Aires Police inaugurated the offices of the department of Crimes Against Public Health and the Environment. The new division is located in the infamous Banfield police precinct, known as Pozo de Banfield, where hundreds of people illegally kidnapped by military and police forces were tortured and murdered in the late 1970s. Lomas de Zamora Federal Judge Daniel Llermanos, who was present during the inauguration ceremony, said that the new "eco-police" will be composed of experts in charge of detecting air, water and soil pollution and toxic substances in food and medicine.

**COLOMBIA****Government Announces Creation of Environment Ministry**

PA1709154592 Santa Fe de Bogota *EL TIEMPO* in Spanish 13 Sep 92 p 6A

[Text] The government has announced in Cartagena the creation of the Ministry of the Environment. This agency will regulate the government's responsibilities to the environment sector and will have an impact on the decisions adopted by government organizations and private enterprise affecting the quality of the environment.

It will have a basic structure formed by planning, coordinating, and executing entities at the national, regional, and local levels.

The announcement was made by Agriculture Minister Alfonso Lopez Caballero at the closing of the XV Latin American Hydraulics Congress and the X National Hydraulics and Hydrology Seminar.

Lopez stated that the government will invest \$1 billion to improve the environment and undertake works in the agriculture sector, especially in the irrigation districts.

A \$600-million loan with multilateral banking organizations is being negotiated to resume, after 20 years, investments in new works.

A National Environment Council—which will be presided over by the environment minister and will be composed of other ministers and representatives of decentralized organizations—will also be created.

The regional autonomous corporations will be tasked with carrying out the environmental policy in the regions and they will enjoy administrative and financial autonomy. The state will delegate responsibilities in the

handling of environmental affairs to community associations, nongovernmental associations, and private entities.

**HONDURAS****High Percentage of Drinking Water Polluted**

92WN0759A Tegucigalpa *EL HERALDO* in Spanish 18 Jul 92 p 16

[Article by Jose Daniel Roque Argenal]

[Text] Luis Munguia Guerrero, the director of the Center for the Study and Control of Contaminants (CESCCO) at the Ministry of Public Health, has confirmed that 80 percent of the water used for human consumption in Honduras is contaminated, and with...excrement, nothing less.

Although the problem is serious, there are areas which are exceptions. and Munguia Guerrero stated that two types of water are available to the country's residents. There is water of good quality in both San Pedro Sula, where it is provided by the Municipal Water Office (DIMA), and in Tegucigalpa, where it is provided by the National Water Works and Sewer Systems Service (SANAA).

But the rest of the communities in Honduras lack water-treatment systems, and the vital liquid consumed there comes straight from the catchment system. It is what is popularly called "pipe water."

In the interior of the country this situation is worrisome, since the untreated water may be agent through which the *Vibrio cholerae* is reaching the mouths and intestines of thousands of Honduran citizens.

Faced with this picture, the CESCCO undertook a study for the purpose of identifying the financial resources and options available for improving the existing systems, both community and municipal.

The plan is ready, and it was submitted first to the Cholera Prevention Commission headed by Dr. Alirio Cruz at the Ministry of Public Health.

"The idea is to submit the plan to the Honduran Social Investment Fund (FHIS) in order to obtain financing for its execution where the improvement of systems to supply water for human consumption with quality controls is concerned," he commented.

If this effort can be carried to completion, the incidence of diarrhea among the people will decline precisely at a time when cholera has struck a pitiless blow against the Honduran population.

Munguia Guerrero emphasized that water pollution in Honduras is a chronic problem, but the deforestation and the forest fires which have damaged the hydrographic basins, reducing the water volume to low levels

at the headwaters and along the length of the rivers of the country, have much to do with this problem.

### **Choluteca River Described as 'Open Sewer'**

92WN0759B Tegucigalpa *EL HERALDO* in Spanish  
18 Jul 92 p 16

[Article by Juan Ramon Duran]

[Text] A group of National Autonomous University of Honduras (UNAH) biologists has confirmed the high level of pollution in the Choluteca River, particularly where it passes through Tegucigalpa.

Dr. Becky Myton, coordinator of the Limnology Project of the UNAH Biology Department, stated that the quantity of biological, physical, and chemical waste dumped into the Choluteca River where it passes through the Honduran capital is alarming.

According to this biologist from the United States, who has lived in Honduras for 20 years, clean water registers a pollution level of zero to one, but the samples collected from 1987 to 1991 show pollution levels of nine to 10, among the highest possible.

A few kilometers upstream of the point where the Choluteca River enters Tegucigalpa, it is subjected to the steady impact of pollution as poultry-breeding farms and factories producing textiles, batteries, and other items dump their industrial waste into it.

This punishment is intensified where the Choluteca passes through the slum settlements and neighborhoods. There the residents dump their biological waste into its channel, because of the poor condition of the sewers and garbage-disposal arrangements.

The basin of the Choluteca River is the largest of those which empty into the Gulf of Fonseca, and its course as it runs from the central to the southern part of the territory of Honduras is 7,580 kilometers long.

The course of the Choluteca resembles a question mark where it runs through the departments of Comayagua, Francisco Morazan, El Paraiso, and Choluteca.

The studies carried out at the headwaters of the Choluteca River have shown that the pollution level there is minimal.

The young microbiologist Florencia Padilla de Cortes, one of the researchers who participated in the study, said that thousands of citizens utilize the waters of the Choluteca River.

Thousands of people wash their clothing and the corn that is later made into tortillas and sold in the markets in the polluted river waters.

They also bathe in the river and use its vital liquid for cooking, and as a result, contract parasites and diseases.

"After confirming this sad picture and analyzing the choices, we have proposed the drafting of an environmental-education program. The area chosen was the Betania slum near the Boulevard of the Armed Forces, where work has been done with the housewives and the school children," Padilla de Cortes said.

The housewives are unwilling to change their hygiene habits, and so work was undertaken with the children at the school in the Betania slum.

The children, who were in the third, fourth, and fifth grades, found on examining their excrement that they all had parasites, and many had suffered episodes of diarrhea.

Biologist Gerardo Borjas, another researcher who participated in the project, commented that when the residents of the Betania slum were surveyed, the majority stated that they did not use water from the Choluteca River.

However, observations at the site proved the opposite. "The waters of the Choluteca are not used in summer, but they are indeed used in the winter," said this biologist, who teaches at the UNAH.

Dr. Myton, who has a degree in ecology from the University of Maryland in the United States, described the section of the Choluteca River which passes through Tegucigalpa as "a huge open sewer."

"The only term which can be applied to the Choluteca under the current circumstances is 'sewer.' Nothing less harsh will do," this expert said. There was anger in the eyes behind the thick lenses of her spectacles.

The subbasins of the tributaries of the Choluteca in the so-called "Tegucigalpa hollow" are those of the Guacerique or San Jose, Sabacuante, Tatumbia, and Chiquito Rivers. They converge at the site of the Mallol Bridge in the very heart of the capital city.

The pollution is so bad that the residents on the banks of the La Orejona Ravine are suffering from the symptoms of respiratory problems because of the air pollution this small tributary of the Choluteca is generating.

The three scientists agree that both primary and secondary treatment of the water of the Choluteca River are urgently needed because of the use of its limited volume for personal purposes by the thousands of individuals living along its banks.

These biologists urge a series of actions, including elimination of the heavy sediment in the river by forcing the enterprises located on its banks to cease dumping their waste into it.

Another possibility is massive reforestation of the areas in which the river arises.

Also recommended on an urgent basis is the repair of the sewage-pipe networks and systems in order to prevent biological waste from being dumped into this basin.



The option of completely filling in this section of the Choluteca River was discarded, both because of the high cost of such an operation and because it would eliminate a natural source.

A brief tour of the banks of the Choluteca shows that the situation is apparently irreversible. The damage done to this basin is irreparable, something like a cancer in a very advanced stage.

The residents of Tegucigalpa have already practically killed the once beautiful, rushing Choluteca River, about which the poet Juan Ramon Molina wrote lovely verses, impressed as he was by its vigor as it passed through the Honduran capital.

Only a joint effort on the part of numerous sectors, particularly the Office of the Mayor of Tegucigalpa and the National Aqueducts and Sewers Department, as well as the residents of the capital, could bring about a miracle—the reestablishment of the volume of the Grande, or Choluteca, River.

#### Photo Caption

Two decades or so ago, many children and young people splashed happily in the waters of the Choluteca River, but today it is a highly polluted basin that poses a threat to health. Currently, it is a great open sewer, and it is subjecting the people who are contributing daily to its destruction to its evil odors.

#### Deforestation Losses Continue at 'Alarming' Rate

92WN0759D Tegucigalpa LA TRIBUNA in Spanish  
1 Aug 92 p 10-B

[Article by Mario Urrutia]

[Text] The ideal of "a green Honduras in the year 2000" is slipping away as the end of the millennium approaches. Thus far, 2,103,757 of the 5 million hectares of vegetation in the country have succumbed to fire or cutting.

According to the records, broad-leaved species cover 53 percent of the Honduran forests, while conifers account for 47 percent. Even in the latter species, the losses have now reached almost one-half. To this alarming information must be added the deforestation of the mangrove stands at the hands of the salt and shrimp industries.

A comparison of the environmental picture in Honduras in 1964 with that in 1988 reveals an annual reduction in the area covered by conifers (pine forests) of 13,908 hectares, and a loss of latifoliate species (broad-leaved trees) over 57,790 hectares.

This shows that there has been an average loss of 71,408 hectares per year, and thus in 24 years, 1,731,792 hectares were deforested. This figure was increased to more than 2 million with the 389,965 hectares lost between 1988 and 1992.

If this has happened in the past 27 years, the next 28 will transform Honduras into a desert unless drastic measures are implemented to halt the destruction.

Between January and June of 1992, there were 1,050 fires nationally, and an area of 89,965 hectares was consumed. It should be noted that these figures represent only the fires and the deforestation which were reported and controlled, and the real figures might therefore be much higher.

In this connection, biologist Pilar Thorn explained that both forest fires and deforestation are destroying vast quantities of floral, grass, shrub, fern, vine, epiphytic, and tree growth.

This destruction creates a series of problems that affect the fauna. "Herbivorous species cannot find food, so that they die or leave the area. The same thing happens with the carnivorous and omnivorous species when the sites where they shelter, find refuge and hiding places, and reproduce are destroyed," she explained.

With the loss of vegetation, the water basins are reduced, making it difficult for amphibious species (fish, otters, beavers, and alligators) to find food and sites for reproduction, due to the erosion and sedimentation caused by the lack of vegetational cover.

This biologist explained that all of the evils with which nature is faced have chain effects—loss of vegetation, extinction of fauna, soil erosion, and the death of micro-organisms in the recycling of materials and nutrients to maintain the ecosystems.

In the long term, this could even mean death for human beings, if they continue to experience the loss of the animals that control pestilences; drought and winter floods; the pollution of the air by smoke; and rising temperatures, among other things.

All of the above hazards merely provide a foretaste of what will doubtless happen if the citizens of Honduras do not conduct themselves in accordance with the established regulations and live in harmony with nature in an era of truly sustained development.

#### 'Serious' Deforestation in River Areas Reported

92WN0759C Tegucigalpa EL HERALDO in Spanish  
12 Aug 92 p 5

[Text] Several hundreds of millions of dollars are needed in order to protect the hydrographic basins of the country, according to the estimates of Guillermo Nunez, an expert on this subject.

The basins of the Ulua, Chamelecon, and Aguan Rivers in the northern sector, and the Choluteca, in the southern region, have been seriously deforested, Nunez emphasized. He is the international coordinator of the project called the National Basin Management Program sponsored by the Organization of American States (OAS) and the government of Honduras.

Based on the studies completed to date, it appears that the situation is alarming, because an intensive process of cutting forest cover is under way.

Nunez said that 87,600 hectares of broad-leaved and coniferous forest are being destroyed annually.

"We carried out this assessment of the area cut per basin and per hydrographic unit in the country, and were then able to determine which basins have the most critical problem so as to draft projects to provide a solution to the problem there," Nunez explained.

In the basins affected, an effort is being made to carry out rural-development projects, such as the planting of trees, and to ensure that the communities benefited participate in the solution of the problem, with the support of nongovernmental organizations and state bodies.

#### **Basins Most Affected**

He said that the basins most seriously threatened are those of the Ulua, Chamelecon, and Aguan Rivers, and in the southern zone, that of the Choluteca River.

The representative of this international body said the microbasins affected are now being surveyed. He noted that every basin has six or eight subbasins. These smaller units are called microbasins.

"Currently we are locating the microbasins that have been deforested and rank high as sources of supply for drinking water, with a view to guaranteeing this supply to the people," he commented.

He emphasized that the protection of the basins which supply drinking water to the citizens of the capital is a priority task. These basins are those of the La Concepcion, Guacerique, Tatumbla, Sabacuante, and La Tigra Rivers, some sections of which have been deforested.

If these basins can be preserved, the drinking water supply for the citizens of the capital can be guaranteed for many years.

Nunez noted that when vegetational cover is lacking, water runs off as if the area were paved. If there is forest cover, however, it retains this liquid, which penetrates the subsoil and flows more slowly.

#### **El Cajon**

With regard to the El Cajon hydroelectric dam, which was named the Francisco Morazan Dam several months ago, there is heavy use pressure, and some of the buffer zones have been deforested.

"This dam, which is the most important engineering project in the country, is being threatened. For this reason, a plan for the management of this basin has been drafted. It is the first such plan to be completed in this country. It was finalized last year with the participation of the Inter-American Development Bank (IDB) and the OAS," Nunez stated.

All of the phases of this plan are being reactivated with a view to its implementation on the instructions of the government and the National Environmental and Development Committee (CONAMA). This will generate a series of benefits including the creation of many jobs and the delimitation of protected forest areas, national parks, and recreation zones.

The basin of the El Cajon covers between 8 and 10 percent of the national territory, and \$25 million will be allocated to preserve it. The funds will come from the IDB, with the nation providing counterpart funds.

On the basis of the above, it is calculated that basins make up 40 percent of the national territory, as a result of which Nunez believes that the problem is still manageable.

"If \$25 million is needed to protect the basin of the El Cajon, this means that \$100 million will be needed to protect all of the basins in the country," this OAS official explained.

## ALGERIA

### Forest Conservation Policies Criticized

92WN0743B Algiers EL WATAN in French 5 Aug 92  
pp 1-2

[Article by Nordine Grine, based on *Le preamenagement forestier (Forest Preplanning)* by S. Grim, 1989: "The Limits of a Conservation Policy"]

[Text] Since proposals calling for the economic development of our forest resources have never been implemented by the forest agency, Algerian forests have in fact been left to themselves and have never benefited from the rational planning and vigilant care that characterize modern forestry operations.

Because of the refusal to develop our forests into productive economic units whose daily management would include steps to safeguard that productive asset, our forests have been reduced to vacant ground exposed to all types of depredation.

Algeria pays the price every year, notably in the form of fires that periodically destroy large areas of our forest resources.

The phenomenon of devastating fires is not new in Algeria, since surveys conducted regularly by the forest agency show that from 1876 to 1955, some 2.9 million hectares of forest were destroyed by fire, with an average of 36,544 hectares—1.15 percent of the forested area—being burned every year.

In the field of fire prevention and firefighting, however, a number of traditional measures (clearing away brush, opening trails and fire lanes, and so on) and measures of a statutory nature had already been adopted by the colonial administration. A circular was even issued providing for the collective punishment of inhabitants living next to areas destroyed by fire and ordering the confiscation of their property.

But as is shown by the fire statistics, the most extreme repressive solutions did not achieve the expected objectives.

During the war of liberation, and especially between 1956 and 1960, setting forest fires became a military objective. Consequently, our forests were frequently set ablaze as a result of shelling or fighting that often took place in wooded areas. For example, in 1956 alone, 204,000 hectares were burned, and after five years of intensive fighting, Algerian forests had been reduced by no less than 610,329 hectares.

After independence, many people felt that destruction of the forests by fire would decline, but in fact, the outcome has been very different. The devastation of our forests has continued at the same pace, and in certain summers—in 1983, for example—it has reached proportions close to those recorded in the worst years of the war. The same causes (the lack of rational forest management, an

underestimation of the economic and social role of the forest, and the absence of forestry activities of a lasting nature) are having the same effects.

Having inherited a protectionist French forest policy, the Algerian forest agency adopted exactly the same approach to preventing and fighting fires (traditional preventive work, repressive legislation, and so on). And exactly as happened under the French forest administration, Algerian foresters still blame their failure to protect our forests on the carelessness of the inhabitants, inadequate human and material resources, and lenient laws, whereas the basic problem is the absence of economic development.

In 1979, the forest agency was made a cabinet department with firefighting as its priority, and it acquired sizable fire prevention and firefighting resources to meet that objective. To prevent fires, for example, each governorate was provided with a radio network providing very dense coverage (over 2,000 operational radios), a weather forecasting network with about 20 stations located in high-risk areas to detect signs of a spreading fire, 400 lookout posts equipped with transceivers, fire watch patrols, and so on.

To help achieve that same objective, an ambitious program for establishing trails (50,000 km), fire lanes (30,000 hectares), and water points (180 water points were established and 2,000 reservoirs planned) was adopted. We should also point out that for the past few years, the forest service has had its own heavy vehicles equipped for fighting forest fires.

Last, active firefighting was made the responsibility of the governor, who may requisition any necessary resources located in the territory under his authority. In case of a major disaster, he can request help from the neighboring governorates and, if necessary, even the Army.

But despite those not inconsiderable investments and the forest agency's expanded prerogatives for fighting fires, forest fires continued to devastate our forests at an average rate of 42,751 hectares per year between 1976 and 1985.

During the summer of 1983, according to official records, fires devastated 221,337 hectares—a record disaster that the army of occupation had been unable to equal even though the destruction of forested areas was part of its strategy.

So it is not simply by reference to the inadequate human and material resources made available by the authorities for safeguarding our forests that one can explain the chronic nature of forest fires and their very expensive results. The underlying causes of those disasters can be attributed to the failure of an allegedly conservation-oriented forest policy that has more than demonstrated its limits and to the refusal by the agency concerned to adopt an economically oriented development policy that

would turn our forests into production centers permanently protected by the firms exploiting them and by the workers they support.

### **Algiers Urban Area Faced With Growing Refuse Disposal Problem**

92WN0743A Algiers EL WATAN in French 9 Aug 92  
p 2

[Article by Nouredine Grim: "Sanitation in Algiers: When Will It Be Brought Under Control?"]

[Text] The city of Algiers has finally succumbed under the weight of its household refuse, which it can no longer pick up and deliver to the dump as fast as it produces it. The result is that refuse, with all the dangers it presents to the health of citizens, has become a permanent feature of the streets and is now part of the daily scenery for the residents of Algiers.

The Algiers urban area, which already has nearly 2 million inhabitants, will have a little over 2.5 million by the end of the century. For its part, the road system totals nearly 1,000 km, but it is certain that because of the construction of new housing areas, that total is going to increase considerably.

For many reasons, and with a few exceptions, the road system has deteriorated greatly, a fact that considerably reduces the efficiency of the urban refuse collection and street cleaning departments.

Each resident of Algiers produces an average of 0.5 kg of household refuse per day, meaning that the city currently produces a daily total of about 1,000 metric tons, but there are certain holidays such as Aid or events attracting people from outside the urban area (the fair and cultural events) when it far exceeds that figure.

It should also be pointed out that refuse is showing a tendency to grow heavier because the same collection point is used to discard not only household refuse but also all kinds of heavy and cumbersome trash (scrap iron, plaster, rubble, and so on), which should normally be picked up by special crews. It can be estimated that from 30 to 40 percent of the refuse actually produced is not collected but disposed of in ways that harm the environment.

While it is difficult to say whether possible changes in the way Algiers residents live will increase or decrease the quantity of household refuse produced every day, it can be predicted, based on population growth forecasts for the urban area, that the increase will amount to 4 or 5 percent per year. In the year 2000, if Algiers residents do not change their way of life, the city will be producing about 1,200 metric tons of household refuse per day.

As far as the length of the streets to be cleaned in the year 2,000 is concerned, it is impossible to venture a specific prediction, but it can certainly be said that the streets will stretch even further and be in even worse condition

because of the lack of maintenance and the anarchy characterizing the work done on the streets, which are never repaired.

The appropriate departments of the People's Council of the City of Algiers try to cope with the irreducible production of household refuse using equipment that has been reduced to less than half its capacity by breakdowns that are prolonged because of the lack of spare parts.

Trash is generally collected at night, but because of the small number of garbage trucks available and the lack of safety in certain neighborhoods, it is also collected during the day. But whether collected at night or during the day, trash is picked up daily.

Wherever possible, trash is collected from door to door, but in large housing complexes, the garbage trucks go from one community trash dump to the next.

Households generally set out their trash in plastic bags or in containers of any kind, but some of them simply dump it loose in the street. That practice, which has appeared in recent years partly because plastic bags are expensive and sometimes in short supply but also because the public authorities are lax, is growing more and more widespread. It also explains the large number of garbage collectors (as many as five) behind each garbage truck.

The reason is that workers must prepare the bags at each collection point before taking them to the truck and also clean up the area. In rainy weather or when, as is often the case, street lights are lacking, the work is harder and takes longer.

Because housing units are overcrowded, there is a relatively large amount of trash per km of street. Over the past several days, the city of Algiers has been providing residents with containers in the form of oil drums cut in half and fitted with two welded-on handles. Those containers make the work of the garbage collectors much easier and greatly facilitate cleaning. But while that program needs to be implemented more widely, it is unfortunately limited to the downtown area.

Whenever possible, the trash collection department tries to use vehicles suited to the urban layout, but since there is not enough equipment, it is often forced to use large trucks in places where the latter find it difficult to navigate and wind up damaging roadways and sidewalks.

In very hilly neighborhoods where the streets are too narrow—the Casbah, for example—trash is still collected using pack animals carrying two baskets that are then emptied into dumpsters.

But regardless of how trash is collected, and in varying degrees depending on the neighborhood, part of it remains uncollected and gets scattered around on the public thoroughfare. The most obvious reason is the poor condition of the streets, which cannot be cleaned properly, but it must also be recognized that lack of discipline on the part of citizens who pay no attention to

scheduled collection times but throw their trash anywhere and at any time has a lot to do with the dirty condition of our streets.

Street cleaning in the Algiers urban area is carried out daily, however, by crews of street sweepers equipped with wheelbarrows and distributed among the various sections of the urban area. The mechanical streetsweepers that were still being used in 1980 have disappeared completely, and that is a pity, since they were fast and could cover a large area every day.

Despite the excessive number of personnel involved—and the resulting high wage costs—the results of traditional cleaning methods seem rather disappointing except perhaps on the major downtown thoroughfares, where crews of sweepers are constantly at work.

The constraints are more or less the same as those faced by the trash collectors: the poor condition of the streets, which encourages citizens to throw everything in the street and prevents effective cleaning; the rather advanced age of the personnel, who work at their own speed and as they please; the lack of trash containers; the high cost of plastic bags; and lack of discipline on the part of the citizens.

As the city spreads, the need for street cleaning is going to increase, and the personnel, who are already unable to stay on top of their work, will never be able to cope using the archaic methods available to them. Mechanization of the work is an unavoidable necessity.

A large city such as Algiers can no longer afford to do without mechanical street cleaning equipment. The acquisition of mechanical street sweeping and cleaning equipment is necessary, if only to keep high-quality sections of the streets clean.

But if all those measures are to be fully effective, they must be accompanied not only by an education and information campaign but also by effective penalties levied against anyone who violates public sanitation regulations. The authorities should also deal severely with the various enterprises (construction firms, water department, and so on) that are the cause of deteriorating roadways. A useful deterrent, and one that is employed in other cities around the world, would be to post appropriate sections of the Penal Code in judiciously chosen places to let people know what it could cost them if they violate the regulations. But the healthiness of our cities depends above all on the state's ability to enforce the law, and in that respect, it must be recognized that a vigorous effort to regain control is essential.

## BANGLADESH

### 20-Year Forestry Master Plan Under Consideration

*BK1709020692 Dhaka Radio Bangladesh Network in English 1530 GMT 16 Sep 92*

[Text] A 20-year forestry master plan is being formulated by the Government to make forest areas a minimum requirement of 25 percent from the existing eight percent in the country. This was stated by Forest and Environment Minister Abdullah Al-Noman in Dhaka today. The master plan to be finalized by December next will be able to create a social movement in the country in favor of forest development and environmental conservation. A draft national forest policy has been prepared and the national conservation strategy is now at its final stage. The Government is now implementing a 157-crore taka [word indistinct] program for the development of wood logs and agro-forestry in the country. Besides, the Forest Ministry has undertaken a special program of 5 crore 50 lakh taka for protecting and developing the decaying bamboo and canes. Mr. Al-Noman said afforestation of coastal mangrove forestry of 1,300 acres, agro-forestry on 4,000 acres and 800 acres of [word indistinct] embankment were completed during the last fiscal year. A 20-crore taka plantation program for 273 projects financed by the World Food Program is also now going on in the country.

## INDIA

### Early Imposition of CFC Phase Out Opposed

*92WN0747A Madras THE HINDU in English 8 Aug 92 p 6*

[Text] New Delhi, Aug. 8—India has let it be known that it would walk out of the Montreal Protocol for phasing out ozone destroying chlorofluorocarbons (CFCs) if ongoing negotiations for putting into place the financial mechanism to help developing countries break down.

Strangely, it was the European Community which recently expressed reservations about supporting the financial mechanism that forms an integral part of the amended Protocol. The mechanism was devised to help the developing countries meet the full incremental cost of switchover to new non-CFC consuming technologies believed to be less harmful to the ozone layer. The last round of negotiations in mid-July in Geneva saw India, along with other developing countries of the Group of 77, walk out of the talks leading to a two-day breakdown of negotiations.

Officials in the Ministry of the Environment and Forests point out that over the next few months before the next round of talks scheduled in November, India will be actively consulting G-77 countries to help formulate a cohesive position to be adopted by the developing countries. It is felt that the failure of the European Community to commit full support for even the comparatively



small fund—only 500-million U.S. dollars for the three-year period, 1994-96—demonstrates a lack of political will to tackle a serious environment issue, a problem that has been directly and irrefutably linked to the use of CFCs.

After the sound and fury of the recently concluded Earth Summit, the 10-day negotiations in Geneva, which ended on July 17, were a disappointment. The summit secretariat had been talking about a 125-billion dollar commitment on the part of the industrialised North towards a Global Environment Facility. But the Geneva meeting saw the Europeans trying to chicken out of even a small initial commitment of 500-million dollars.

#### **Urgent Issue**

This time around, it was the West Europeans and the Japanese who seemed to be on the same side indicating their unwillingness to come up with the money. The United States and the Nordic countries did not back out of the commitment made through the Protocol. The issue has become urgent as the interim financial mechanism is scheduled to be transformed into a permanent mechanism by the end of this year. The amended Protocol has already come into effect as more than 20 countries, including India, have ratified it.

Another issue discussed at the recent meeting in Geneva was the question of the phase out timetable for CFCs. A great deal of pressure was exerted on the developing countries for speeding up the phase out of CFCs. The timetable was sought to be revised so that the actual phase out in the developing countries would begin five years earlier, 2005 instead of 2010. This was also strongly resisted by India and many other developing countries.

Under the Protocol as amended in 1990, the developed countries, which are the biggest users of CFCs, were to completely phase out CFCs by the year 2000. However, since the amendment in 1990, a NASA team established that the ozone depletion problem was far worse than thought earlier and required urgent attention. A large "hole" in the ozone layer was discovered above Canada, in addition to the springtime "hole" above the Antarctica. The growing number of skin cancer cases in the United States and far-off Australia were connected to the fast depleting ozone layer.

It was the panic created by this that led the United States and some European countries to announce they would speed up the phase out of CFCs, although a few years earlier this had been resisted. Now that Europe and the U.S. are keen to complete their phase out by 1995, there is pressure on the developing countries too to begin the phase out by 2005. The Protocol entitles developing countries with less than 0.3 kg per capita annual consumption of CFCs "to delay for 10 years its compliance with the schedule of control measures" set out in the document.

#### **India Fighting Early Imposition**

But India is fighting tooth and nail against an early imposition of the phase out. It has maintained that if the western nations have unilaterally decided to go in for an early phase out, there is no reason to impose this on the developing world. About two years ago the total world consumption of CFCs was estimated at 1.3-million tonnes, with the United States alone accounting for 300,000 tonnes. As against this, India's consumption is only about 6,000 tonnes and even a high growth scenario estimates consumption to go up to only 80,000 tonnes by 2010.

India has yet to formulate its strategy for phase out of CFCs. A preliminary report on this has been prepared by the Department of Industrial Development and is under consideration of the Ministry of Environment. Costs of switchover to new technologies has not yet been worked out, but as the Ministry of Environment has stated repeatedly, the Protocol provides for all incremental costs to be met through the international financial mechanism to be set up specifically for this. If the mechanism is not in place and if the North refuses to come up with the money, India and the developing countries will have no obligations under the Protocol.

And the G-77 countries have let it be known that they mean this. At the first sign in Geneva that the European Community was dithering on the issue of funds, India, Pakistan, China, Mexico and a number of other countries walked out of the negotiations. Preparations are now being made for the next bout in November, when the transformation of the interim financial mechanism into a permanent one is expected to take place—if the negotiations proceed smoothly.

### **IRAQ**

#### **Minister Blames IAEA for Not Evacuating Radioactive Fuel**

*NC2209145092 Paris AFP in English 1425 GMT  
22 Sep 92*

[Text] Vienna, Sept 22 (AFP)—Iraq accused the International Atomic Energy Agency (IAEA) on Tuesday of endangering the environment and people living near a site where the agency has stored radioactive fuel which was to have left the country.

But the agency hit back saying that the Baghdad government was blocking funds which were to pay for the transport of the fuel which has been recovered during investigations of Iraq's secret nuclear programme.

Human 'Abd'-al-Ghafur, the Iraqi education and scientific research minister, blamed the agency "for being responsible for not putting into practice" a paragraph in U.N. Security Council Resolution 687 which says the material should leave Iraq.

However, an agency spokesman said the IAEA did not have the funds to finance the operation and Baghdad had not paid up.

"The money was to come from the sale of Iraqi crude oil which Baghdad refuses to do on the international market," he said. "We are therefore in an impasse."

The fuel has meanwhile been temporarily stored at an open-air depot near (Tuwaythah). "The fuel is in a very bad state which is getting worse every day and part of it can break up at any moment, causing a radioactive accident with serious consequences for the neighbouring environment," the minister said.

He added that the IAEA had promised Iraq in the spring that the fuel would be removed within three months.

The agency, which has conducted 14 missions to Iraq since May 1991 to uncover and disarm the secret nuclear weapons programme, said it would cost 20 million dollars to move the 35 kilograms (77 pounds) of fuel to a recycling plant in special containers and aircraft.

It also said it was "troubled" by Iraq's refusal to reveal the suppliers and the advisers to the nuclear programme.

## SUDAN

### Popular Movement Head Backs Jonglei Canal Project

NC1309102092 Cairo MENA in Arabic 1222 GMT 12 Sep 92

[Text] Cairo, 12 Sep (MENA)—Al-Tahir 'Abdallah al-Jal, head of the Islamic Council for New Sudan [Ra'is al-Majlis al-Islami li al-Sudan al-Jadid], has affirmed that southern Sudan's relations with Egypt have historical roots. This region experienced Islam for the first time in 1935, when the first group from southern Sudan visited Egypt to study at al-Azhar University.

Al-Jal said in exclusive statements to MENA that the presence of an active member representing the southern region in the Egyptian-Sudanese Committee for Solidarity is a major political move for the region.

On the stand of the popular movement and the Sudanese People's Liberation Army regarding digging the Jonglei Canal, he clarified that this is considered a vital project for the region for many reasons. If this canal is dug, 24 billion cubic meters of water will flow into the Nile. If it is not dug, 14 billion [as received] cubic meters of water will be wasted, and this would cause flooding, turning

many areas into swamp land. This, in fact, would mean the disappearance of (Funjaq) area.

Al-Tahir 'Abdallah, who currently is visiting Cairo, said the Jonglei project also is a national project, the objective of which is to develop Sudan, increase its quota of water, enlarge its agricultural area, and realize social development, stability, and security. The project was not intended to provide Egypt with water.

He noted that due to the circumstances of the war, the project has suffered from the same effects as other projects. When the war ends, this will become part of the core of Egyptian-Sudanese relations.

Regarding building a new Sudan, he clarified that they are following a new trend that proceeds from the firm fact that Sudan's interests are Egypt's interests and vice-versa, and that their progress and security are mutual.

He said the issue between the two countries lies in how to best exploit water resources in the interest of the two peoples and their development and how to develop the two countries and bolster their economic and security capabilities, in addition to other such issues to confront future challenges.

Al-Tahir 'Abdallah called on Arab brothers and Muslim friends to help the Sudanese opposition in its attempts to eliminate the current regime in Sudan and establish a democratic regime that believes in pluralism and human rights.

He affirmed that the struggle in Sudan is not a struggle between Islam and Christianity, but a struggle for human rights and the establishment of justice and equality. The problem will continue to exist as long as the ruling authority insists on portraying it as a religious problem.

Regarding the al-Bashir government's recent announcement about expelling a number of missionaries from southern Sudan, he clarified that the human rights' violations inside the city of Juba continue and that the popular defense militias of the Islamic Front are torturing and killing innocent people under the pretext that they support the Sudanese People's Liberation Movement. They use the United Nation's food supplies politically and religiously, he said. Information about all these operations is being leaked by the people inside. The Islamic Front government, however, believes the missionaries are watching its activities, since they are conscientious people who would convey to the world what is happening. They do not want the world to learn about the crimes they are committing in the south.

## REGIONAL AFFAIRS

### French TV Examines Legacy of Soviet Nuclear 'Crimes'

92WN0769A Moscow IZVESTIYA in Russian 5 Sep 92  
Morning Edition p 6]

[Article by Yuriy Kovalenko, IZVESTIYA correspondent, Paris: "On the Trail of Nuclear Catastrophes: The Investigation of French Television Journalists Carried Out in Russia and Kazakhstan"]

[Text] They called their trip to the former Soviet Union "A Journey on the Trail of Nuclear Crimes." These trails they have discovered everywhere—in Moscow and Chelyabinsk, Yekaterinburg, and Semipalatinsk, in the Russian and Kazakh hamlets forgotten by the authorities, in the forests and rivers, in hospitals and factories.

The trip resulted in a 52-minute film, which will be shown on 23 September in France by the FR-3 television station within the framework of the popular weekly broadcast "March of the Century". Its authors are the three well-known French television journalists Erve Bryuzini, Dominique Ters, and Jean-Francois Renu, which were accompanied by the scientist Vladimir Lelekov, who for 20 years worked in the Institute for Atomic Energy imeni Kurchatov.

In this film—at least for the inhabitants of the former Soviet Union—to all appearances, there are no sensations of any kind. Most likely, our television and press have already talked about everything in the last few years. And nevertheless, the blood turns cold when they show the newly-born cripples and the sick children where they conducted tests for many years. When you listen to the story of the man who during 2 years of military service had to measure the level of radiation right away after the nuclear explosion. When you see the 18-year old girl who works in a plant whose radiation level exceeds the norm ten-fold. "But where to disappear to?" she asks expressing doom.

"Similarly to how the forest is not visible for the trees, so after Chernobyl it was impossible for a long time to recognize the real dimensions of the nuclear catastrophe, to which your country has fallen a victim during the past 40 years," says Dominique Ters after viewing the film arranged for your [as published] correspondent. "And up to now, its consequences remain unknown. The Soviet authorities knew how to conceal their crimes. All of them were perpetrated behind closed doors, in cities and settlements to which access was prohibited. Without any witnesses. Or almost without them.

Today, it goes without saying, it is much more simple to find witnesses than a few years ago. One of them, Viktor Alekseyevich Galoshchalov (all Russian surnames were recorded by the French by ear, and for this reason, regrettably, they may contain errors), during 1962 to 1963 served at the nuclear testing range in Semipalatinsk, where in those two years almost 100 tests were

conducted. Together with other soldiers, he had to measure the radiation right away after the explosion. "We were guinea-pigs," he says.

Guinea-pigs, as it turned out, the French journalists think, were also the inhabitants of near-by villages in the region where in 40 years 689 explosions were conducted. "We did not think," the Kazakh physician says, "that one could act in such a way with respect to one's people. . . ."

35 years ago, the nuclear waste deposit not far from Chelyabinsk exploded, and as a result a minimum of 270,000 people found themselves in a radioactive cloud. To this day, the public does not fully know what happened at that time, and up to now the consequences of the explosion have not been eliminated.

. . . an enormous open deposit of uranium ore in Aktau (Kazakhstan), which is being exploited since 1964. Kazakh uranium is one of the cheapest and is being successfully exported. The director of the factory for its enrichment, Aleksandr Yakovlev, asserts that the level of radiation in his enterprise is five times lower than the admissible medical level and that the workers have excellent protection from their simple dark-blue overalls. However, the instruments of the Parisian journalists showed 5,700 microroentgen, which, in their words, is 230 times higher than the level that exists in French nuclear power stations.

"These are enormous and inadmissible doses," is the commentary on the readings from people's deputy Nikolay Valitskiy, who himself has been working for almost 30 years in this factory. "The workers work here and have absolutely no information of any kind about the dosages of irradiation to which they are subjected. This is inhumane. . . . Yes, people are silent. We have become used to live like this. . . ."

For the burial of radioactive waste from the factory, beginning in 1970, they use the lake that is situated not far from the Caspian Sea, whose water in its turn is threatened with poisoning. A new Caspian Chernobyl may happen, N. Valitskiy warns, as a result the whole region will prove to be infected.

Is it possible that nothing has changed here during the past years, the Frenchmen want to know. "We have been told that you have democracy now."

"You have seen this democracy," comes the answer of one of the participants of the film, lieutenant-colonel Tukin, who is fighting for the rights of the radiation victims. "Where is this democracy? Some people have replaced others. As far as the new structures are concerned, they are quite unable to do anything. Unfortunately, they have become as corrupt as those which existed previously. And sometimes even more so."

"This film and broadcast which we are preparing," Erve Bryuzini tells me, "is a warning, above all, to all Western countries. What has taken place in the former Soviet

Union is directly relevant also to France and to the United States. When the explosion occurred in Chelyabinsk, the CIA and the French secret services found out about it at once. But the authorities, which were informed by them, were silent, no one reacted. Why? Information about the nuclear explosion would have alarmed the Western public and thereby would have threatened our nuclear program."

"That was the silence of accomplices," E. Bryuzini continues. For this reason, the West bears part of the responsibility for what happened in your country. Not long ago, the director of the CIA, Gates, declared that the radioactive pollution in the CIS is a genuine catastrophe. For its elimination, in his words, tens of billions of dollars and many decades are needed. We want to ask Gates, whom we invited to our broadcast: Why were you silent at that time?"

"Yes, nuclear punctures have occurred also in the West," E. Bryuzini remarks, "but in contrast to the USSR, our public found out about them more frequently. In your country, the victims themselves had to sign not to divulge the secret, they assumed the obligation not to tell anyone about their approaching death. . . . I am struck by the fact that up to now your population does not understand all the dangers connected with radiation. One of the directors of the Siberian Division of the Academy of Sciences quite seriously tried to convince us: The people cannot be told anything since we cannot do anything to help it. Such information, in his opinion, will only call forth panic and stresses and nothing more. But even if this is so, it is impossible to conceal the truth. Concealing it from people, you will never find the solution of the problem."

## RUSSIA

### Parliament Committee Accuses Government of Ignoring Ecology

LD1809210192 Moscow ITAR-TASS in English  
1731 GMT 17 Sep 92

[By ITAR-TASS correspondent Ivan Novikov]

[Text] Moscow, September 17 (TASS)—The Russian parliament's Committee for Ecological Matters and Rational Use of Resources today charged the Russian government with the failure to pay proper attention to ecological problems.

The committee pointed out in a statement that a tendency has surfaced to revise approaches to the building of a harmonious system of control over the environmental protection activity in the country.

The committee also stressed that the laws on environmental protection and sanitary and epidemiological safety are not being enforced and ecological rules and standards have yet to be worked out.

The committee said the government was not monitoring the process of rehabilitation of the areas affected by technogenic disasters, including the 1986 Chernobyl blast.

### Privatization Said To Entail Unique Ecological Risks

92WN0761A Moscow NEZAVISIMAYA GAZETA  
in Russian 25 Aug 92 p 4

[Article by Aleksey Golub: "Clean Air and Private Property: The Ecological Aspects of Privatization in Russia"]

[Text] By decree No. 341 of the president of the RSFSR, the fundamental statutes on the privatization of state and municipal enterprises in Russia were ratified on December 29, 1991. Although the goal of privatizing the basic elements of natural resources potential has not been set for the next few years, the measures alluded to in the program cannot be considered "ecologically neutral." For example, up to 80 percent of automobile transport services should be privatized this year. The share of discharges of harmful substances into the atmosphere contributed by so-called moving sources is nearly 50 percent, and in cities this figure reaches up to 70-80 percent. Small enterprises in production industries are subject to privatization. Each of them alone does not represent a significant danger to the environment or concern for the residents of nearby homes, but all together, they could do a substantial amount towards polluting water supplies and the air. Trash-burning plants can be privatized by order of local authorities, and all other enterprises, including those related to standard branches, can be privatized by order of the Russian government. Enterprises like, for example, the ZIL factory, or the Moscow oil-refining plant, or the Baykal TsBK [pulp and paper mill].

In our opinion, among the enterprises privatized in 1992, there could turn out to be a large number of polluters. According to expert evaluations, their share of discharges into the atmosphere and dumping into water resources could be 40 to 60 percent.

As a result of privatization, the state will lose its last opportunity to fix the ecological limits within which enterprises must function. The state will be forced to treat the enterprise as a sovereign unit, whose rights are protected by law to a larger degree than are our common interests in the sphere of environmental protection.

Until the present, environmental quality standards were set by norms regulating the maximum permitted concentration (PDK). It is believed that pollution rates within the limits of the PDK affect neither the environment nor humans. Based on the PDK, a maximum permitted emission of waste products (PDV) was calculated. But in practice, enterprises, with rare exceptions, have been unable to comply with the norms. A system of temporarily approved waste product rates (VSV) was developed for them. These norms were



calculated with consideration of the technical and financial condition of the enterprises, which were temporarily permitted to produce higher amounts of waste products than the amount stipulated by ecological norms with the condition that step by step, the volume of waste products would decrease. The deadlines and scales of the decrease in polluting could be revised only depending on the dynamics of the ecological situation. Of course, every revision made towards stiffening the normatives, gently speaking, would evoke dissatisfaction on the part of the enterprise. Finally, it would agree. Pressure from the directive organs and financial aid from the ministry played a decisive role in this conflict.

Of course, in a market economy, administrative levers are replaced by economic stimuli, which must affect the polluting enterprise. But we won't be able to count on their effective application in the next few years. The system of fines operating now for the dumping of harmful materials is substantially less than the expenses required to decrease polluting, and it is more advantageous for the enterprise to pay for the waste products without decreasing their volume. Tax-related and other privileges designated in the environmental protection law are for all practical purposes invalid, because the appropriate amendments have not yet been introduced into other laws, especially taxation legislation.

To proceed with privatization without determining the rules regarding the ecological factor is simply impermissible. For this reason, very soon it will be necessary to ratify the temporary rules with regard to the ecological factor in the privatization process of state property. The simplest way would be to ratify a single form of license (permission) for dumping (utilization of natural resources). The use of this kind of license (or a simplified version) as a mandatory document formulated during the privatization process must be examined. First, the actual situation with the impact on the environment caused by the facility undergoing privatization would be stated on the license. Second, the period that the license is valid would be indicated (the first license should be a temporary one) and the conditions for obtaining a new license based on a complex expert examination, and the deadlines for conducting it would be established in the privatization documentation. On having received the enterprise property, its new owner would know that he does not have the right to accumulate waste products above a certain level, he would be informed ahead of time of the forthcoming limit revision, he would be told the deadlines and the methods for its revision. Under these conditions, he is free to decide how advantageous privatization of the given facility is.

We understand the inadequacies of this procedure, but we propose that it is the best we can do now with regard to the facilities subject to mandatory privatization in 1992. At the same time, it would be possible to recommend that the federal government and regional authorities attempt to isolate from the list of facilities those that are ecologically dangerous, and postpone resolving the question of their privatization.

The facilities that can be privatized either by decision of the local authorities or of the federal government should be turned over for privatization only on the basis of "blitz" expert examination. This expert examination will make it possible to establish more or less exact starting ecological requirements. The commission conducting the privatization should give preference to the potential owners who propose the best ecological parameters for the facility's utilization.

In this manner, in order that the privatization process be placed under environmental protection organ control, we must:

- prepare a sample statute on calculating the ecological factor in the privatization of enterprises and property;
- introduce mandatory ecological auditing for enterprises undergoing privatization giving more precise definitions of the ecological parameters that must be met by the enterprise;
- prepare a sample contract between the owner of the enterprise undergoing privatization and environmental protection organs on fulfilling certain ecological requirements and grant that document legal status. This contract would reiterate much of what was said in the license for the utilization of natural resources. But, unlike the license, it would carry the two signatures of the environmental organs' representative and the property owner;
- conduct a mandatory state express expert examination of the most important facilities intended for privatization.

In 1992, privatization of the basic elements of natural resource potential (mineral and water resources, timber reserves, the resources of the continental shelf and so on) was prohibited. The resources remain the property of the state, which transfers them to nonstate enterprises for utilization. At the same time, a certain portion of the resources remains under the control of state enterprises (state concerns, joint-stock companies [AO] and so on), that are themselves nothing more than restructured branch ministries.

According to this system, two questions are still unclear: 1) who represents the interests of the state as an owner of natural resources, and who has the authority to turn over state resources for utilization by private businessmen. As a rule, the rights to control natural resources are in fact being awarded to local government organs; 2) what rights do state enterprises have in questions concerning the regulation of the natural objects turned over to them. The unregulated nature of these rights is leading to a situation where the resources given to state enterprises are being used as a sublease or are deposited by them as shares in joint business ventures. Analysis of a feasibility study of several joint ventures shows that in joint enterprises like these, as a rule, Russia's interests as an owner of natural resources are not represented.



The question of transferring property and natural objects to the ownership of foreign businessmen deserves separate examination. For now, we have a lot of examples in which foreign firms, attracted by cheap raw materials and labor, have proposed projects that would be the cause of increased stress on the environment. Among the many potential partners, we must select those who understand that by aggravating ecological problems in Russia, eventually, through global changes in the environment, conditions will unavoidably grow worse in the countries that want to force ecologically dangerous production into Russia, to move the center of gravity of the world's raw material sector to our country.

The government must provide privileges for western investors who are capable of proposing advanced environmental protection and resource-conserving technologies. By doing this, it would be completely unnecessary, for example, to force the exploitation of the Arctic, the continental shelf, and so on for natural resources.

At the same time, we must agree under almost any conditions to turn over scraps and other secondary resources that we, ourselves, are unable to recycle.

It seems that it would be important for the world community to establish control over western investors. It is in its interests not to allow the ecological crisis in Russia to become any worse, because it could grow into a global ecological catastrophe. Maybe it would be useful to change KOKOM's goals and to prohibit the import of ecologically dangerous technologies and the development of manufacturing processes that increase stress on the environment into the countries of the former USSR and Eastern Europe.

#### **Government Issues Order on Establishing Pollution Emission Norms**

925D0665B Moscow ROSSIYSKIYE VESTI in Russian 29 Aug 92 p 4

[Text of the procedures to be used in developing and approving standards for the control of emissions and discharges of pollutants into the environment, for limits upon the utilization of natural resources, and for the disposal of waste.]

[Text] 1. The following procedures for developing and approving standards for the control of emissions and discharges of pollutants into the environment, for limits upon the utilization of natural resources, and for the disposal of waste have been devised in compliance with the Law of the RSFSR on Protecting the Environment dated 19 December 1991.

2. Ecological standards for the control of emissions and discharges of pollutants into the environment, for limits upon the utilization of natural resources, and for the disposal of waste have been approved by the Ministry of Ecology and Natural Resources as well as by other government bodies of the RSFSR concerned with environmental protection and the use of natural resources

and by agencies in the fields of public health and epidemiological supervision specially authorized to act within the limits of their professional competence.

3. Ecological standards for the control of emissions and discharges of contaminating substances leading to pollution over large distances as a result of transborder (including interregional, interrepublic, and international) shipments of these substances together with the standards for the utilization of the natural resources having federal or interregional significance have been approved by the Ministry of Ecology and Natural Resources of the Russian Federation.

The development of plans for establishing these standards shall be organized by the Ministry of Ecology and Natural Resources working jointly with other government bodies of the Russian Federation concerned with environmental protection and the use of natural resources, and by agencies in the fields of public health and epidemiological supervision specially authorized to act within the limits of their competence; and also in joint cooperation with executive agencies of republics, krais, oblasts, the cities of Moscow and Saint Petersburg, and autonomous areas, as well as with agencies of local self-government, within the Russian Federation.

4. Parameters for emissions and discharges of contaminating substances into the environment (including the maximum allowable and amounts established as harmful) as well as parameters for the utilization (depletion) of natural resources and for the disposal of waste shall be established for specific enterprises, institutions, and organizations that use natural resources by agencies of the Ministry of Ecology and Natural Resources of the Russian Federation, jointly with other RSFSR agencies concerned with the environment or using natural resources and agencies in the fields of public health and epidemiological supervision specially authorized to act within the limits of their professional competence.

The plans for establishing these standards shall be worked out for the enterprises, institutions, and organizations with due regard for proposals submitted by agencies of local self-government, scientific institutions, public organizations, and the opinions of the local population.

5. Ecological standards for the control of emissions and discharges of pollutants into the environment, for limits upon the utilization of natural resources, and for the disposal of waste shall be devised in compliance with the Law of the RSFSR on Protecting the Environment, as well as with other regulations and legislative acts; they shall also be consistent with criteria established for other state-sponsored and regional ecological programs; and they shall conform to the ecological needs of the regions in such a way as to prevent any disturbance to the environmental equilibrium, while serving to protect the life and health of the local population.

In establishing these standards, due consideration is to be given to the achievements of science and technology

in the integrated and efficient use of natural resources and to the preservation of the environment; consideration should also be given to the economic and technological potential of the enterprises, institutions, and organizations that use the natural resources, and to the particular natural and climatic conditions of the territories.

6. Parameters of maximum allowable or temporarily sanctioned emissions and discharges of contaminating substances into the environment shall be set for the enterprises, institutions, and organizations that use natural resources, designating stages or transitional periods for meeting the standards set for maximum allowable emissions and discharges.

Limitations placed upon the disposal of waste shall designate the place of disposal and the required dimensions of assigned space (volume), methods and conditions for the storage and preservation of waste, and other criteria relevant to the restriction and prevention of adverse effects upon the environment and living conditions of the local population.

With respect to each type of natural resource that is utilized (depleted), limitations shall be placed on its use for a specific period of time and with due regard for technological development, improving technological processes, conditions for obtaining a given resource, changes in the demand for it, and other factors involved.

7. Permission given for the emission and discharge of contaminating substances into the environment, for the use (depletion) of natural resources, and for the disposal of waste shall be in accordance with the procedures established for the enterprises, institutions, and organizations that use natural resources.

8. The Ministry of Ecology and Natural Resources of the Russian Federation shall institute the operating methods to be followed in establishing ecological standards for the control of emissions and discharges of pollutants into the environment, for limitations upon the use of natural resources, and for the disposal of waste.

9. Management of the efforts involved in setting standards for the control of emissions and discharges of pollutants into the environment, for determining the limits to be placed upon the use of natural resources, and for the disposal of waste shall be the responsibility of local executive bodies in the various territories of the republics, krais, oblasts, the cities of Moscow and Saint Petersburg, and autonomous areas, as well as agencies of local self-government, acting in joint cooperation with agencies of the Russian Federation in preserving the environment and in controlling the use of natural resources, as well as with specially authorized agencies in the field of public health and epidemiological supervision.

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**Resolution of the Government of the Russian Federation approving the procedures to be used in developing and approving ecological standards for the control of emissions and discharges of pollutants into the environment, for limits upon the utilization of natural resources, and for the disposal of waste**

In accordance with the Law of the RSFSR on Protecting the Environment dated 19 December 1991, the Government of the Russian Federation resolves:

1. To approve the procedures as submitted for developing and approving standards for the control of emissions and discharges of pollutants into the environment, for limits upon the utilization of natural resources, and for the disposal of waste.

2. This resolution enters into force upon its adoption.

[Signed] Ye. Gaydar

*Approved as Resolution No. 545 by the Government of the Russian Federation on 3 August 1992*

#### **Statute on Conserving Degraded, Polluted Agricultural Land**

925D0669B Moscow ROSSIYSKAYA GAZETA  
in Russian 2 Sep 92 p 4

[Text of Statute "On Procedures for Conserving Degraded Agricultural Land and Land Polluted by Toxic Industrial Waste and Radioactive Substances"]

[Text]

1. This statute, drawn up in accordance with the Land Code of the RSFSR, establishes the procedures for conserving degraded agricultural land and land polluted by toxic industrial waste and radioactive substances for the purpose of preserving and restoring soil fertility, improving the natural environment, and protecting public health.

2. Degraded land is considered land on which changes in the condition of the soil are steadily taking place as a result of human or natural factors.

3. Conservation of land or temporary exclusion of land from production is accomplished to prevent the development and eliminate the processes of soil degradation, restore the land's fertility, and rehabilitate polluted areas.

Special conditions of land use may be instituted or the specific purpose of the land may be changed depending on the method of restoring degraded agricultural land and the degree of pollution of the land.

4. The following are subject to conservation:

a) agricultural land with severely eroded, highly saline, or severely waterlogged (as a result of rising of ground water or violation of ecological requirements) soils, to a large degree desolated, having settlement of the surface as a result of the mining of minerals, and deer grazing

pastures with a severely disturbed soil and plant cover, in instances when use of land with these degradation characteristics for a specific purpose leads to further development of negative processes and a worsening of the soil condition and the ecological situation;

b) land polluted by toxic industrial waste above the maximum allowable concentrations or by radioactive substances above the maximum allowable levels.

5. Land removed from production as a result of conservation is preserved for the land proprietors, landowners, and land users (when they create the necessary conditions for restoration of degraded agricultural land and polluted land) or is transferred to the land reserve.

6. Disclosure of degraded agricultural land and polluted land is done by means of inspections conducted according to approved methods by enterprises, organizations, and also citizens licensed to conduct these inspections by agencies of the Ministry of Ecology and Natural Resources of the Russian Federation and the Committee for Land Reform and Land Resources under the Government of the Russian Federation.

7. During the course of the inspections for disclosing degraded and polluted land, they ascertain the location, area, and composition of land, the condition of the land at the time of the disclosure, the dynamics of its changes during the last 5-10 years, and the causes of the land degradation and pollution.

8. Maps, cartograms, and tables according to the types and degree of land degradation and pollution are made based on the results of the inspections, and a conclusion is also prepared for the future use of the land (introduction of special land use conditions, changing the specific purpose of the land, recommended period of conservation, and a sample listing of measures for restoration of degraded agricultural land and polluted land).

9. Preparation of materials for land conservation shall be accomplished by agencies of the Ministry of Ecology and Natural Resources of the Russian Federation and the Committee for Land Reform and Land Resources under the Government of the Russian Federation, with participation of the Ministry of Agriculture of the Russian Federation and the State Committee for Public Health and Epidemiological Supervision.

10. The prepared materials for land conservation submitted for consideration to the local councils of people's deputies that have jurisdiction of these lands shall contain the following documents:

a) an expert conclusion of agencies of the Ministry of Ecology and Natural Resources of the Russian Federation and the Committee for Land Reform and Land Resources under the Government of the Russian Federation;

b) a conclusion of agencies of the State Committee for Public Health and Epidemiological Supervision (for

lands polluted by toxic industrial waste and radioactive substances) and the Ministry of Agriculture of the Russian Federation;

c) the plan of the land proprietor, landowner, or land user, with the boundaries given for areas subject to conservation;

d) an explanation of agricultural lands indicating the degree of degradation and pollution of the soil;

e) a conclusion of organizations and collectives conducting the inspection;

f) the opinion of land proprietors, landowners, and land users and their obligations for land restoration;

g) a sample listing of measures for restoration of degraded agricultural land and polluted land, indicating who is to perform the measures and the sources them;

h) information on monetary losses, damage, and agricultural and forestry production losses caused by deterioration of the condition of the land.

11. Decisions on future use of degraded agricultural land and polluted land shall be made by local councils of people's deputies or, at their direction, by the appropriate executive and administrative bodies.

12. Losses caused by a deterioration of land quality and a limiting of its use, including lost profit during the period of conservation, shall be reimbursed in full to the land proprietors, landowners, or land users by those enterprises, institutions, organizations, and citizens responsible for the land degradation and pollution.

13. When deterioration of the quality of land of land proprietors, landowners, and land users is caused by their economic activities, improvement of the land and the ecological situation shall be accomplished by such users at their own expense.

In the event of refusal to carry out these measures, the necessary funds shall be recovered in court through legal action by agencies of the Ministry of Ecology and Natural Resources of the Russian Federation and the Committee for Land Reform and Land Resources under the Government of the Russian Federation and transferred to special accounts of ecological funds and the land seized and transferred to the land reserve.

14. Besides reimbursement of losses and damage caused by the degradation and pollution of lands, enterprises, institutions, organizations, and citizens shall reimburse losses of agricultural and forestry production if deterioration of land quality resulted from their activities.

15. Determination of losses and damage of agricultural and forestry production shall be accomplished according to methods and standards approved in the prescribed

manner and, in their absence, according to actual expenditures for restoration of degraded agricultural land and polluted land, taking into account the losses incurred, including lost profit.

16. Persons at fault may be completely or partially exempted from reimbursing damages and losses of agricultural and forestry production provided they carry out necessary measures in a timely manner to restore degraded agricultural land, rehabilitate polluted land, and improve the ecological situation.

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**Resolution No. 555 of the Government of the Russian Federation on Approval of the Statute On Procedures for Conserving Degraded Agricultural Land and Land Polluted by Toxic Industrial Waste and Radioactive Substances, issued 5 August 1992.**

The Government of the Russian Federation resolves:

1. To approve the attached Statute On Procedures for Conserving Degraded Agricultural Land and Land Polluted by Toxic Industrial Waste and Radioactive Substances.

2. The Committee on Land Reform and Land Resources under the Government of the Russian Federation, the Ministry of Ecology and Natural Resources of the Russian Federation, and the Ministry of Agriculture of the Russian Federation, together with other concerned ministries and departments, shall ensure systematic conduct of work for disclosing and conserving degraded agricultural land and polluted land, and also monitoring the accomplishment of measures to restore the lands.

3. The Ministry of Ecology and Natural Resources of the Russian Federation and the State Committee for Public Health and Epidemiological Supervision, with participation of the Ministry of Agriculture of the Russian Federation, shall ensure the development of accepted standards of the maximum allowable concentrations of hazardous substances in the soil and methods of determining them, taking into account the current ecological requirements and international standards.

4. The Ministry of Ecology and Natural Resources of the Russian Federation, the Committee for Land Reform and Land Resources under the Government of the Russian Federation, the Ministry of Agriculture of the Russian Federation, and the Russian Academy of Agricultural Sciences in 1992-1993 shall develop and approve instructional methods documents for disclosing degraded agricultural land and polluted land, a method system for determining the damage from degradation and pollution of the soil, and also for reimbursement of losses of agricultural and forestry production due to land deterioration.

5. To establish that work for disclosing degraded agricultural land and polluted land, the development of measures for their restoration, and also the formulation of materials for conservation of land shall be financed using

funds received as reimbursement for losses of agricultural and forestry production, collection of payments for land, and assets of local ecological funds.

6. Measures for restoration of degraded agricultural land and polluted land shall be financed using funds of the enterprises, institutions, organizations, and citizens responsible and also funds allocated for improving land, increasing soil fertility, improving the ecological situation, and eliminating the after-effects of natural and other disasters.

[Signed] Ye. Gaydar

**Statute on State Monitoring of Land Use, Protection**  
925D0671B Moscow ROSSIYSKAYA GAZETA  
in Russian 2 Sep 92 p 4

[Text of Statute on Procedures for Accomplishing State Monitoring of Land Use and Protection]

[Text]

#### **I. General Provisions**

1. This statute establishes the procedures for accomplishing state monitoring of land use and protection developed in accordance with the Land Code of the RSFSR and is compulsory for all enterprises, institutions, and organizations, regardless of their subordination and form of ownership, and also for citizens on the territory of the Russian Federation.

This statute governs relations until adoption and implementation of Fundamentals of Land Legislation of the Russian Federation in accordance with the Federative Treaty.

2. State monitoring of land use and protection shall be accomplished by the appropriate councils of people's deputies and administrations and also by specially authorized state bodies in accordance with legislation in force. The task of state monitoring is to ensure observance of the requirements of land legislation by all enterprises, institutions, and organizations, as well as citizens, foreign legal and physical entities for the purpose of efficient use and protection of land.

3. Specially authorized state bodies accomplishing monitoring of land use and protection are:

—the Committee for Land Reform and Land Resources under the Government of the Russian Federation and its local bodies;

—the Ministry of Ecology and Natural Resources of the Russian Federation and its local bodies;

—the State Committee for Sanitation and Epidemiological Supervision and its local bodies;



—the Ministry of Architecture, Construction, and Housing and Municipal Services of the Russian Federation and local architectural and construction supervision bodies.

These bodies shall accomplish monitoring of land use and protection in cooperation with the councils of people's deputies and the administration, and among themselves.

## II. Functions of Bodies Accomplishing State Monitoring of Land Use and Protection

4. In accordance with the tasks of state monitoring of land use and protection, bodies of the Committee for Land Reform and Land Resources under the Government of the Russian Federation, the Ministry of Ecology and Natural Resources of the Russian Federation, the State Committee for Sanitation and Epidemiological Supervision, and the Ministry of Architecture, Construction, and Housing and Municipal Services of the Russian Federation shall:

- accomplish state monitoring of land use and protection in accordance with their jurisdiction;
- organize inspection and expert examination of the changes in land quality;
- take steps to eliminate violations of land legislation;
- make proposals in the prescribed manner on conservation of degraded and polluted land, the further use of which may lead to negative ecological consequences and contamination of agricultural products;
- inform the population of the status of land resources and steps being taken to protect the land;
- participate in the work of commissions on the acceptance of reclaimed, recultivated, and other lands on which measures have been conducted to improve their quality and also facilities constructed to protect the land.

5. The Committee for Land Reform and Land Resources under the Government of the Russian Federation and its local bodies shall accomplish state monitoring of the following:

- observance of land legislation and established conditions of use of sections of land by enterprises, institutions, organizations, and citizens according to the purpose for which they have been granted;
- stopping unauthorized occupying of land sections;
- providing reliable information on the presence, condition, and use of farm lands and also information on the presence of available land resources;
- timely recultivation of deteriorated land, restoration of fertility and other beneficial characteristics of land, the removal, use, and preservation of topsoil when conducting work associated with disturbing the land;

—planning, placement, and construction of projects affecting the condition of land;

—timely and qualitative accomplishment of measures to improve land, prevent and eliminate erosion, salinization, swamping, underflooding, desolating, drying up, overconcentration, blocking up, pollution, and other processes resulting in land degradation;

—observance of established time periods for consideration of citizens' applications for the granting of land parcels;

—setting up and preservation of surveying signs;

—timely return of land granted for temporary use.

6. The Ministry of Ecology and Natural Resources of the Russian Federation and its local bodies shall accomplish state monitoring of the following:

—fulfillment of environmental protection requirements when allocating land for all types of economic activities;

—observance of ecological standards when developing new equipment, technologies, and materials for cultivating soil, and also when locating, planning, building, and operating enterprises and other facilities;

—prevention of the blocking up of land and also the pollution of soil by waste water, pesticides, mineral fertilizers, and toxic and radioactive substances;

—observance of the established conditions for use of environmental-protection, park, and recreational lands;

—accomplishment of measures called for by land management projects and other projects relating to the protection of soil and rational use of land;

—reliability of information used when conducting state land valuation, monitoring land, and in land management;

—observance of land legislation relating to land protection;

—stopping unauthorized occupying of environmental-protection, park, and recreational lands;

—performance of work for the recultivation of disturbed land;

—accomplishment of measures for preventing deterioration and destruction of topsoil, degradation of land, and conservation of agricultural lands and polluted lands taken out of production.

7. The State Committee for Sanitation and Epidemiological Supervision and its local bodies shall accomplish state monitoring of the following:

—observance of sanitation legislation and sanitation rules when using plots of land, establishing protected,



sanitation, health, and recreational zones, and planning and operating industrial enterprises and facilities for the use, processing, and burial of radioactive and toxic household materials and waste;

- prevention of contamination of land with bacterial-parasitic and quarantine harmful organisms and pollution by chemical and radioactive substances.

8. The Ministry of Architecture, Construction, and Housing and Municipal Services of the Russian Federation and local architectural and construction supervision bodies shall accomplish monitoring of the following:

- prevention of unauthorized construction;
- observance of urban development requirements when using land for construction of facilities.

### **III. Rights and Responsibilities of Officials of Bodies Accomplishing State Monitoring of Land Use and Protection**

9. Officials of bodies of the Committee for Land Reform and Land Resources under the Government of the Russian Federation, the Ministry of Ecology and Natural Resources of the Russian Federation, the State Committee for Sanitation and Epidemiological Supervision, the Ministry of Architecture, Construction, and Housing and Municipal Services of the Russian Federation, in accordance with the functions entrusted to them for accomplishing state monitoring of land use and protection and within their jurisdiction, have the right:

- to send to the appropriate bodies materials on violations of land legislation to decide on prosecuting guilty parties;
- to take action in court and in the court of arbitration on recovering damages caused as a result of violation of land legislation;
- to submit proposals to the local administration to halt the mining of minerals and peat, the conduct of geological exploration, geodetic, and other work if it is being accomplished with violation of land legislation and may lead to the destruction, pollution, contamination, or deterioration of the topsoil, development of erosion, salinization, swamping, or other processes reducing soil fertility, including adjacent territory;
- to submit proposals to the local administration on complete or partial confiscation of land in the following cases: when land is used for other than the intended purpose; inefficient use of land by methods leading to a decrease in soil fertility or deterioration of the ecological situation; non-use of sections of land during time periods specified by land legislation;
- to compile records on violations of land legislation;
- to halt industrial, civilian, and other construction, operation of facilities, agrotechnical and forest reclamation work leading to violation of the requirements of land legislation, and also work which is conducted

with violation of conditions for using environmental protection, park, recreational, and historical-cultural lands;

- to visit enterprises, organizations, and institutions without restriction upon presentation of credentials and to inspect sections of land owned, in possession, in use, and leased, as well as sections of land occupied by military, defense, and other special installations, taking into account established conditions for visiting them;
- to give enterprises, organizations, institutions, and also citizens compulsory instructions and directions on questions of land protection and elimination of land legislation violations;
- to receive from ministries and departments statistical accounting, approved in the prescribed manner, on the condition of land resources;
- to enlist, in the prescribed manner, the help of specialists for conducting inspections of agricultural lands, expert examination, and verification of accomplishment of measures for land protection.

10. The Committee for Land Reform and Land Resources under the Government of the Russian Federation, jointly with other bodies accomplishing state monitoring of land use and protection, shall compile an annual report on monitoring of land use and protection.

### **IV. Procedure for Imposing Fines for Violations of Land Legislation**

11. Local bodies of the Committee for Land Reform and Land Resources under the Government of the Russian Federation, the Ministry of Ecology and Natural Resources of the Russian Federation, the State Committee for Sanitation and Epidemiological Supervision, and architectural and construction supervision, in accordance with their jurisdiction in an administrative manner, shall impose fines for violations of land legislation.

12. Local bodies of the Committee for Land Reform and Land Resources under the Government of the Russian Federation shall impose fines for:

- unauthorized occupying of land parcels;
- blocking up of land;
- deterioration and destruction of topsoil;
- violation of deadlines for return of temporarily occupied land and failure to make the land suitable for its intended use;
- planning, locating, and building facilities that adversely affect the condition of the land;
- distorting information on the condition and use of land;

—violation of deadlines for considering citizens' applications for the granting of land plots and concealment of information on the availability of free land resources;

—destruction of surveying signs.

13. Local bodies of the Ministry of Ecology and Natural Resources of the Russian Federation shall impose fines for:

—unauthorized occupying of environmental protection lands and park lands;

—blocking up of lands;

—pollution of land by toxic and radioactive substances, industrial waste, and sewage;

—deterioration and destruction of topsoil;

—failure to fulfill obligations for making temporarily granted lands suitable for use for their intended purpose;

—planning, locating, and building facilities that adversely affect the ecological condition of lands.

14. Local bodies of architectural and construction supervision shall impose fines for:

—unauthorized construction;

—planning, locating, and building facilities that adversely affect the condition of lands.

15. Local bodies of the State Committee for Sanitation and Epidemiological Supervision shall impose fines for:

—unauthorized construction with violations of public health rules and norms for soil protection;

—pollution of lands with chemical and radioactive substances and contamination by bacterial, parasitic, and quarantine harmful organisms.

16. Cases on these law violations shall be considered by commissions of specially authorized bodies accomplishing state monitoring of land protection and use in accordance with legislation on administrative violations.

17. The fines imposed by bodies of state monitoring of land use and protection shall be paid to accounts of non-budget funds of local councils: unauthorized occupying of land plots; unauthorized construction; violation of deadlines for return of temporarily occupied land; failure to fulfill obligations for making lands suitable for their specific purpose; violation of deadlines for considering citizens' applications for the granting of land plots; and concealment of information on the availability of free land resources.

For other violations specified by Article 125 of the RSFSR Land Code, the fines shall be paid to accounts of republic, kray, oblast, and local non-budget ecological funds.

18. The Committee for Land Reform and Land Resources under the Government of the Russian Federation, the Ministry of Ecology and Natural Resources of the Russian Federation, the State Committee for Sanitation and Epidemiological Supervision, and the Ministry of Architecture, Construction, and Housing and Municipal Services of the Russian Federation shall jointly issue explanations on the procedure for accomplishing state monitoring of land use and protection and approve the forms of documents necessary to accomplish it.

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**Resolution No. 594 of the Government of the Russian Federation on Approval of Statute On Procedures for Accomplishing State Monitoring of Land Use and Protection, issued 2 August 1992]**

The Government of the Russian Federation resolves:

1. To approve the attached Statute on Procedures for Accomplishing State Monitoring of Land Use and Protection.

2. The Ministry of Ecology and Natural Resources of the Russian Federation and the Committee for Land Reform and Land Resources under the Government of the Russian Federation, with participation of concerned ministries and departments, shall approve by 1 December 1992 methods for determining the amount of damage caused as a result of degradation of soil, deterioration of the ecological condition of land, and deterioration and destruction of land.

3. The Committee for Land Reform and Land Resources under the Government of the Russian Federation and the Ministry of Ecology and Natural Resources of the Russian Federation within one month shall submit for approval to the Russian Federation State Committee for Statistics a statistical accounting form on monitoring land use and protection.

[Signed] Ye. Gaydar

### **Curtailment of Cuba Nuclear Plant 'Ill-Advised'**

PM1609151392 Moscow IZVESTIYA in Russian  
10 Sep 92 Morning Edition p 4

[Yevgeniy Bay report: "Russia Concerned at Castro's Unilateral Decision to Terminate Construction of Nuclear Power Station in Cuba"]

[Text] F. Castro's surprise statement on the "temporary cessation of the construction of the Juragua nuclear power station" in Cuba did not produce an immediate response from the Russian side. When IZVESTIYA asked the supervisors at the joint construction project for an explanation they even doubted the authenticity of the ITAR-TASS report from Havana.

There was good reason to be surprised. The construction project has been experiencing difficulties for a long time. Neither side has the means to speed up the commissioning of the first power unit. Nevertheless, when a

Russian delegation visited Havana last April it seemed that the sides had arrived at a joint solution. Specifically, Cuba pledged to pay the specialists from the CIS working on the construction of Juragua in hard currency. The final payment, according to A.K. Nechayev, first deputy chief of "Zarubezhatomenergostroy," arrived last week, at almost the same time as Castro's statement terminating construction.

The decision was announced at a mass rally in Cienfuegos, a city not far from the nuclear power station construction site, and was adopted by Havana without coordination with its partner, the Russian supervisors of the station note. From Sunday through Tuesday Moscow awaited an explanation directly from Havana or else from the Cuban embassy in Russia, but none was forthcoming.

A vast sum has been invested in the construction of the nuclear power station—\$1.1 billion, A. Nechayev recalled—and the first power unit is 90-percent complete there. So it is extremely ill-advised to stop construction. A unilateral decision to end construction, taken without informing a partner who has been playing a key role in building the nuclear power station, is a "wrong move," in his words.

It emerges from Castro's explanations that it would have cost Cuba \$300,000 a month in wages for the Russian specialists. It would have been madness to go on with the nuclear station's construction, the Cuban leader said, without the confidence that it would be commissioned, not to mention the matter of supplies of nuclear fuel for it.

In that case, why did Havana not say that at the talks in April? Did it overestimate its own abilities, or was Castro's statement just another venting of spleen in response to the deteriorating relations with Moscow?

I would remind you that last year, when M. Gorbachev announced the withdrawal of the Soviet military brigade from the island, Havana was particularly annoyed at the fact that this decision was adopted by the then USSR leadership without coordination with the Cuban side. However, it seems to me that there is a "vast distance" between the withdrawal of one military unit, which hurts neither side, and the unilateral termination of an enormous joint construction project.

Addressing journalists on Tuesday, S. Yastrzhembskiy, leader of the Russian Foreign Ministry Information and Press Department, stated that the temporary suspension of the construction of the nuclear station could create serious economic problems for both countries. In the Foreign Ministry's opinion, "it is quite simply essential for the Russian organizations to hold talks with the Cuban side, during which we can examine all the consequences of this step."

Incidentally, at that press conference S. Yastrzhembskiy also announced that a Russian delegation of diplomats and military men is going to Havana Wednesday to

discuss with the Cuban authorities the withdrawal of the remaining Russian troops on the island. There are 1,600 servicemen still in Cuba in a brigade which numbered 2,800 men a year ago and, according to Russian Defense Minister P. Grachev's statement, they will all be withdrawn by mid-1993.

A similar fate now awaits the final group of CIS civilian specialists who were working on the construction of the nuclear power station (just over 100 people remain) and who now have nothing to do in Cuba.

Thus the final beacon of "fraternal cooperation" in Cuba is being extinguished. It is a sad finale but not a tragic one. After all, you can view the problem from a different angle. Every cloud has a silver lining, as they say. The continuation of construction and the possible commissioning of the first nuclear power station unit in Cuba had been causing anxiety around the world, above all in the United States, for quite a long time now. According to the many reports published in the U.S. press recently based on the information of Cuban refugees who were previously specialists at Juragua, construction there was "slipshod, to put it mildly," as the WALL STREET JOURNAL writes.

V. Servera, former chief engineer at the site, who was responsible for reactor quality, notes, for example, that the welded pipes of the cooling system, the reactor's most important assembly, have been weakened by soldering and welding defects. The steam supply equipment was left out in the open completely uncovered for over 18 months. Finally, in recent months the experienced and skilled specialists from the CIS at Juragua have been replaced by poorly trained Cubans.

The well-known Russian "conscientiousness," augmented by the Cubans' "meticulousness" (and increased by their leadership's unpredictable actions) could create problems worse than those which our countries will have to discuss in the immediate future.

#### **Presidential Decree on Operating Authority for Nuclear Power Stations**

925D0720A Moscow ROSSIYSKAYA GAZETA  
in Russian 17 Sep 92 p 6

[Decree No. 1055 on the Organization for the Exploitation of Nuclear Power Plants in the Russian Federation, signed by B. Yeltsin, Russian Federation president, 7 September 1992]

[Text] Taking into consideration the need for centralized state control of nuclear power stations and securing their safety in accordance with MAGATE [International Atomic Power Agency], I hereby decree:

1. It is established that the Russian state concern for electric and thermal energy at nuclear power plants (the Rosenergoatom Concern) is a state enterprise which, on its own and with the participation of other enterprises (organizations) performs the required functions during

all stages of the operational cycle of nuclear power plants in terms of the choice of sites, design, construction, commissioning, exploitation, termination of exploitation, and other functions of the exploiting organization.

2. It is established that the property of nuclear power plants—existing, under construction, planned, or mothballed (nuclear systems, fissionable substances, equipment, buildings, and installations which are part of the nuclear-power cycle)—and any other property used for the direct purpose of ensuring the functioning of nuclear power plants is federal property.

Within a period of one month the Russian government must ratify the list of said sites and properties used in the nuclear power industry.

3. In coordination with the Russian Federation Ministry of Atomic Energy, the Russian Federation State Committee for the Administration of Government Property, assign by contract to the Rosenergoatom Concern the right to full economic management of the following:

The federal property of nuclear power plants: existing, under construction, planned, or mothballed (nuclear systems, fissionable substances, equipment, buildings, and installations included in the nuclear-power cycle);

The federal property of state enterprises and organizations (as per the appendix) directly used in ensuring the functioning of nuclear power plants.

4. The local administrative authorities shall assign to the Rosenergoatom Concern land sectors within the boundaries of the safety protection zones of nuclear power plants with the right to open-end utilization.

5. It is established that the Rosenergoatom Concern is authorized to transfer on a contractual basis the federal property assigned to it along with the right to operative management of said nuclear power plants, enterprises, and organizations.

6. In signing the contract which assigns to the Rosenergoatom Concern the federal property, the Russian Federation State Committee for the Administration of State Property, coordinated with the Russian Federation Ministry for Nuclear Energy, will secure conditions for ensuring safety throughout all the stages of the active cycle of the nuclear power plants.

7. It is established that:

The Russian Federation State Committee for the Administration of State Property, coordinated with the Russian Federation Ministry for Nuclear Energy, will approve the statute of the Rosenergoatom Concern and the statutes of the nuclear power plants, enterprises, and organizations listed in item 3 of the present decree;

On the instruction of the Russian Federation State Committee for the Administration of State Property, the Russian Federation Ministry for Nuclear Energy will conclude a contract with the head of the Rosenergoatom

Concern and, on the presentation of the head of the concern, with the managers of nuclear power plants, enterprises, and organizations listed in item 3 of the present decree.

#### **Data Cast Further Doubt on Radiation Safeguards**

92WN0785A Moscow ROSSIYSKAYA GAZETA  
in Russian 15 Sep 92 p 2

[Unattributed report: "Based on the Data of Gosatomnadzor [State Inspectorate for Nuclear Power: Nuclear and Radiation Safety of Russia"]

[Text]

#### **Nuclear Power**

Today there are 9 nuclear electric power stations (AES) at work in the republic, where 28 power-generating units are operated with an installed capacity of more than 20 million kilowatts (including 12—of the VVER [water-moderated and water-cooled reactor] type, 11—of the RBMK [uranium-graphite channel-type reactor], and 5—with other types of reactors). The share of nuclear power in the energy supply of Russia comes to about 11 percent, moreover in the Northwest Region it accounts for 63 percent, in the Central Region—for 26 percent, and in the Middle Volga Region—for 18 percent.

During the first six months of 1992, 106 (as against 104 in 1991) violations of various sorts were registered at the AES of Russia. The greatest number of them (65 percent), confirmed by research reports, have been established at the power-generating units with pressure reservoir reactors of the VVER type, 30 percent—at pressure tube reactors of the RBMK type-1000 (Chernobyl type).

However, at the RBMK-1000 reactors in some cases the violations were accompanied by more serious consequences. Thus, for example, on 24 March at power-generating unit III of the Leningrad AES decompression of one of the working canals occurred due to the destruction of a multi-purpose valve, which led to the closing down of the discharge of coolant through this canal. The incident was accompanied by the emission of radioactive substances into the environment in excess of the established limits. This is the third case of dangerous damage of working canals in the practice of the operation of RBMK reactors. To exclude the repetition of such cases, the State Inspectorate for Nuclear Power, on the basis of materials of a commission of inquiry, has prescribed the replacement of the old model with canals of new design at all power-generating units.

In characterizing the state of the safety of nuclear stations on the whole, one should note their nonconformity with contemporary requirements of nuclear and radiation safety and the inadequate efforts of the Ministry of Nuclear Power of Russia in regard to the implementation of approved measures called upon to guarantee an increase in the level of their safety. The deadlines have frequently been postponed and at the present time there



is a lack of confidence in the full implementation of the necessary measures. As of today, not one of the operating nuclear stations has a procedurally complete basis of safety that includes conclusions about its state and an analysis of every possible consequence of the operation of the power-generating units.

For this reason, the State Inspectorate for Nuclear Power of Russia considers it necessary to adopt a State Program for the Use of Nuclear Power, which would include a part about the development of nuclear power engineering, as well as parts devoted to the reconstruction and withdrawal from operation of the existing power-generating units of the AES of the first generations.

#### Research and Industrial Reactors

During the first six months at five nuclear research reactors, three critical and eight sub-critical testing grounds subordinated to the State Inspectorate for Nuclear Power, accidents and violations of the conditions and limits of safe operation were not established.

In accordance with inspections conducted earlier and the decision of the presidium of the Moscow City Soviet, the State Inspectorate for Nuclear Power has issued an order for the stoppage of reactors of type MP and IR-8 of the Kurchatov Institute.

In April the collegium of the State Inspectorate for Nuclear Power adopted a decision on stopping the operation of two industrial reactors located at a mining and chemical combine of the Ministry of Nuclear Power of Russia (Krasnoyarsk-26), in connection with the pollution of the floodlands of the Yenisey River with radioactive waste. The first reactor was shut down in June, the withdrawal from operation of the second is scheduled for September of the current year.

#### Radiation Safety

According to the data of the State Inspectorate for Nuclear Power, more than 13,000 enterprises and organizations of the national economy of the republic use approximately 200,000 sources of ionizing radiation or work with radioactive waste. Here 130 research reactors, critical and subcritical testing grounds have been installed.

In connection with the broad use of sources of ionizing radiation (III) and technologies, as a result of which radioactive waste materials (RAO) are formed, the problems of the burial of radioactive waste and the uncontrolled spread of articles with radionuclide sources (IRI) acquire an increasingly acute character.

The inspections of the subordinated enterprises and organizations revealed the following characteristic violations of the radiation safety requirements: The lack or untimely reauthorization of the medical certificates for depositories of sources of ionizing radiation and premises designated for work with these sources; inadequate monitoring of the terms of validity of the certificates by

the territorial health and epidemic centers; the storage of radioactive waste and radioactive instruments that have not been used for a long time and do not have any prospects of being used; the lack of information of the places of burial of radioactive waste; the lack of radiation monitoring (this is characteristic of the MPS [Ministry of Industrial Construction]; the inadequate technical equipment of many enterprises and organizations with the means of radiation monitoring.

The most acute problem is the burial of radioactive waste. The specialized Radon Combine carries out the collection, transport, and burial of the radioactive waste that accumulates in enterprises and organizations. The chief problem here lies in the fact that the capacities of the regional depositories of Radom are filled almost to the limit.

In 1992 the burial of articles with radionuclide sources in a temporary "burial ground" was revealed. During an inspection of the Mosrentgen Plant (city of Vidnoye of Moscow Oblast), the burial of defective articles with radionuclide sources and polluted equipment with a total radioactivity of several thousand curies was discovered on its territory. The very fact of the existence of this burial ground (it is about 30 years old) is the most flagrant violation of the requirements of the NTD [scientific-technical documentation] known to the Ministry of Industry of Russia and the organs of Goskomsanepidnadzor [State Committee for Medical and Epidemic Supervision], which are not taking any measures for its elimination. The Gosatomnadzor [State Inspectorate for Nuclear Power] has proposed to the Ministry of Industry of Russia, Goskomsanepidnadzor of Russia, and the administration of the oblast to eliminate the burial ground.

Cases of the theft of sources of ionizing radiation have continued. For example, on 30 March, in a tie-impregnation plant in Volgograd, seven radionuclide sources of caesium-137, with a radioactivity each of 3.2 curies, were stolen; on 3 April, in the Turbodetal Production Association (city of Chelyabinsk), two heads of a gamma-ray flaw detector, containing sources of iridium-193 with a total radioactivity of 230 curies were lost. Cases of mass theft of sources of ionizing radiation have also been established. Thus, as the result of the flagrant violation of the requirements of scientific-technical documents pertaining to the registration and storage of radioactive substances, 150 educational sets of "Pluton" radio isotope sources were stolen from the warehouse of the educational collector in Irkutsk during 27-30 April. The radioactivity of every set is approximately 50 curies. 114 sets have been returned, the search for the remaining ones continues.

The potential danger of the uncontrolled spread of radionuclide articles is aggravated by the circumstance that, in connection with the reorganization and reduction in the number of military units, unaccounted-for instruments for various purposes, containing sources of ionizing radiation, are handed over by way of patronage



assistance to schools, vocational-technical schools, and other educational institutions. To bring them to light, the regional organs of the State Committee for the Supervision of Nuclear Power, jointly with the technical inspection of the Ministry of Education of Russia and the regional organs of Goskomsanepidnadzor of Russia have organized an audit of educational institutions.

On the whole, the state of radiation safety in Russia is an unsatisfactory one, although the facts cited cannot give a complete picture for its entire territory, since the work in regard to the exposure and registration of sources of ionizing radiation in enterprises and organizations not belonging to the system of the Ministry of Nuclear Power of Russia is not yet completed. The situation is aggravated by the general increase of the cost of the services of special combines and special washing machines, which will create the preconditions for the concealment and unsanctioned burial of radioactive waste.

In order to bring about a fundamental improvement of the radiation situation in the country, the speediest adoption of the State Program for the Treatment of Radioactive Waste is necessary.

#### **Kola Nuclear Power Leak 'Posed No Hazard'**

*LD1509154192 Moscow ITAR-TASS in English  
1432 GMT 15 Sep 92*

[Report by ITAR-TASS correspondent Veronika Romanenkova entitled "Condensate Tank Leak at Kola Nuke Station Posed No Hazard"]

[Text] Moscow, September 15 (TASS)—The airtightness of the reserve condensate tank of the Kola nuclear power station's third power unit, which is under repairs, was disrupted. The incident occurred on September 12 and, according to the international scale of events, is classed as zero level, i.e. without radiological consequences for people, a spokesman at the press centre of the Rosenergoatom [Russian atomic energy] company told ITAR-TASS.

The tank is outside the reactor compartment of the nuclear power station in an unattended sector of the power unit. The tank leak was eliminated and the contamination spot localised. Water from the tank with a low radiological content has been collected and the premises have been decontaminated.

There was not exposure of personnel to radiation and there was no release of radioactive substances into the environment, the spokesman said.

#### **Scientist Reports Chernobyl Sarcophagus 'Cracks'**

*LD1709162392 Moscow ITAR-TASS World Service  
in Russian 1345 GMT 17 Sep 92*

[By ITAR-TASS correspondent Nikolay Krupenik]

[Text] St. Petersburg, 17 Sep—The sarcophagus of the fourth block of the Chernobyl nuclear electric power

station has become unsealed in places. Academician Spartak Belyayev reported this at an international conference "Nuclear Technologies in Tomorrow's World," which is being held in St. Petersburg. The scientist from the Russian scientific center, the Kurchatov Institute, noted that although six years ago the builders promised that the covering would be reliable until the end of the century, the "concrete body" has already yielded cracks: atmospheric deposits are periodically penetrating the cracks.

To confirm this the leading expert on the consequences of the nuclear catastrophe presented his colleagues with data on observations, calculations, and unique television and photographic film taken in recent years by expeditions of scientists from Moscow, St. Petersburg, and Kiev. Thanks to original technical judgments, the teams of scientists were able to "peep" through the mass of concrete and metal into the old reactor building.

According to Academician Belyayev, the total area of cracks and fissures in the artificial covering of the power set remains has reached 1,000 square meters. The second thing that worries experts now, said the scientist, is the old and explosion-damaged elements of the building structures. "One cannot guarantee that they will hold up for a long time. They may fall down." Academician Belyayev cautioned that releases of radioactive dust through the unsealed covering are to be expected as a result. "Nevertheless, every measure is being taken to somehow secure the dust, especially on the top floors, and special watering of the wreckage is carried out periodically."

The established realities, noted the Moscow scientist, make one think as to what should be done next. As calculations show, over 90 percent of the reaction fuel has remained inside the wrecked building. The academician reminded that in the summer the Ukrainian Government announced an international competition for the best project to make the Chernobyl facility ecologically safe, and expressed a personal opinion: Before implementing any constructive ideas, first a hermetically sealed "lid" is needed, inside of which a technological platform with robot-transporters could be placed. After that the dismantling of the obstructions should be gradually started, separating the highly radiation-polluted materials from the other elements, packing them into special containers, and burying them right there. Today this is the optimal way, concluded the expert of the Kurchatov Institute, Russian scientific center.

#### **Supreme Soviet Panel Discusses Draft Law on Nuclear Wastes**

*OW1709153792 Moscow INTERFAX in English  
1452 GMT 17 Sep 92*

[Following item transmitted via KYODO]

[Text] On Thursday [17 September], the Russian parliament's Committee for Environmental Protection and

Rational Utilization of Natural Resources discussed the draft law on the state policy in handling radioactive wastes.

Physician Yevgeniy Nesterov who heads the working group accused the Ministry for Atomic Industry of conservatism and reluctance to adjust its enterprises to modern safety norms. "In the absence of a concept of nuclear-related legislation and of a law on the utilization of nuclear energy, the danger of the Chernobyl tragedy will be hovering over Russia," he said.

The work to draft the law on ways of handling radioactive wastes involved U.S. experts. The law will be discussed at the 5th session of the Russian parliament next week.

### **Russian-Finnish Seminar Examines Nuclear Waste Issue**

#### **Yablokov on Waste Ban**

*PM2109153392 Moscow ROSSIYSKAYA GAZETA in Russian 17 Sep 92 First Edition p 7*

[Sergey Pankratov report under the rubric "Nuclear Waste": "Russia Could Become a Scrap Heap. Russian Parliamentarians Should See That It Does Not"]

[Excerpts] Helsinki—It would seem that the Russian parliament has approached this problem single-mindedly by deciding to ban the import and burial of nuclear power industry waste from other states on the republic's territory before the adoption of the appropriate law. The law, in its turn, is to prevent the country being turned into a dump for radioactive waste.

However, a joint seminar of Russian and Finnish parliamentarians held in Helsinki gives every reason to suggest that during the examination of the draft law at the fall session, representatives of our nuclear energy complex will put pressure on Russian deputies in order to get the amendments they want. [passage omitted]

Out of all that was heard at the seminar, it was the announcement by Academician Aleksey Yablokov that in August of this year the Russian Government allowed, by way of an exception, a train carrying waste from East European AES's [nuclear electric power stations] to be admitted for burial purposes that attracted special attention.

What does Mr. Yablokov think of this decision of the government's? Will Russia accept radioactive waste from Finland? A hail of questions descended on the head of our parliamentary delegation during the recess. I will cite only excerpts from this impromptu press conference.

[Yablokov] The Soviet Union has left us an inheritance in the shape of agreements with other states. Having declared itself the successor of the former USSR, Russia must meet the obligations it has assumed, including in the receipt of radioactive waste. As for Finland, if the

agreement to export nuclear fuel was signed at an inter-governmental level, there is a 99-percent guarantee that it will be fulfilled.

[Questioner] *What then is to become of the Russian parliament's resolution?*

[Yablokov] All that is needed is a special decision of the Russian Government. And if there was one on the countries of East Europe, I do not see any reason why it should not adopt one on Finland also.

[Questioner] *But do you not consider, as a close adviser of President Yeltsin, that it is time to halt the creation of a huge radioactive waste dump on the territory of your country?*

[Yablokov] In principle, I think that we can organize the reprocessing of nuclear fuel if we observe ecological norms. Very keen debates are under way on this score in the relevant commissions of the Russian parliament. At the same time, as the president's adviser, I will note that he is ready to agree to any law adopted in this sphere by the Russian Supreme Soviet... [Yablokov ends]

One of the Finnish participants in the seminar remarked that Russian parliamentarians will have to adopt a decision of a scientific rather than a political character on the question. After all, the deputies' basic discussion will revolve around the problem of whether to regard spent nuclear fuel as waste or as a product requiring reprocessing for further use.

One further reason why the draft law as it now stands could be subjected to substantial amendment became clear during the Russian-Finnish seminar. We are being promised big money for the possibility of burying nuclear waste on Russian territory. Academician Yablokov mentioned in this connection a promising offer from Korea...

Right now one thing is clear: If the law is adopted in its latest interpretation, Russia will open its borders to radioactive waste from all over the world. Whatever is said about reprocessing, byproduct residues will ultimately poison our soil. And this is already politics, and big-league politics at that.

#### **Joint Efforts Promised**

*PM2109154192 Moscow IZVESTIYA in Russian 17 Sep 92 Morning Edition p 5*

[Marat Zubko report: "Nuclear Waste Problem Does Not Recognize National Borders"]

[Text] Helsinki—"The problem of radioactive waste does not recognize national borders. We must jointly ensure that the environment is ecologically clean for future generations," this was how Finnish Parliament Deputy P. Paasio explained the significance of the seminar held in the Finnish parliament on issues relating to burying nuclear waste on former USSR territory.

Knowledgeable people took part in the discussion. On the Russian side there was Russian presidential adviser Academician A. Yablokov, A. Poryadin, deputy minister for the ecology and natural resources, Supreme Soviet Deputy A. Butorin, and various experts.

What specifically was the point at issue? For example, the fact that a new Russian law now bans the acceptance or burying in Russia of waste from other countries, whereas this was practiced in the former USSR. However, bearing in mind the existence of interstate agreements, waste is nevertheless arriving in our country by decision of the government. From both Finland and Hungary.

There was also discussion about the fact that a nationwide map of regions damaged by radiation is currently being drawn up in Russia, information on which will be presented to the country's population at the end of the year. Inventorying of all enterprises that use radioactive substances is also being carried out, and an all-Russian safety signaling system is also being established.

Academician A. Yablokov's statement that in his personal opinion it would be possible to abandon the use of nuclear power stations altogether caused a sensation. According to him, they could be replaced by powerful gas turbine units designed for military needs, which, after some alteration, could generate enormous amounts of electricity and heat.

For their part, the Finnish parliamentarians noted that they are still concerned about the state of the AES's [nuclear electric power stations] at Sosnovyy Bor and on the Kola Peninsula, the uranium enriching combine in Estonia, and other installations. They reminded the Russians that at their latest meeting in Spitsbergen, the foreign ministers of North European countries submitted a proposal to carry out a detailed inspection of all AES's in East Europe.

J. Blomberg, representative of the Finnish Foreign Policy Department, notified those attending the seminar that this year Finland has earmarked 6.4 million markkas for necessary modernization of the Sosnovyy Bor AES, and that next year another 12 million markkas will be allocated for this purpose.

### **Russia-Norwegian Expedition Says Radiation Level in Kara Sea Low**

*LD1209164392 Moscow ITAR-TASS in English  
1416 GMT 11 Sep 92*

[By ITAR-TASS correspondent Valeriy Loskutov]

[Text] Oslo, August 11 (TASS)—The level of water radiation in the Kara Sea east of the Novaya Zemlya Archipelago is very low and within the established limits, Lars Foejun, head of a Russian-Norwegian expedition told a local news agency here on Friday.

The expedition completed a three-week trip on the Viktor Buinitsky ship to northern latitudes and returned to the port of Kirkenes on Thursday.

Russian and Norwegian specialists in sea investigations and nuclear safety planned to look for sunken radioactive waste in the area of Novoya Zemlya and determine the general ecological situation in the region.

According to Foejun, Russian authorities did not permit the expedition to visit three bays on the eastern part of the Archipelago where, as local environmental organizations claim, there is the main sea junkyard of used nuclear reactors from icebreakers and submarines.

"If all this is on the sea bottom," Foejun noted, "water samples taken for the content of Caesium-137 show that there is no radioactive leakage for the time being.

"The level of radioactive water in the Kara Sea is not higher than in the Barents Sea or Oslo Fjord and is only a tenth of the Baltic Sea radiation background. The higher level of the Baltic Sea's radiation pollution is more likely explained by the after effects of the Chernobyl disaster."

The expedition collected rich scientific material, including water and soil samples from various depths. Russian and Norwegian specialists will painstakingly examine the samples over the next year.

It is planned to publish the final results of the joint expedition and forward them to an international expert commission.

### **Japanese TV Highlights Russian Navy's Negligence in Nuclear Disposal**

*OW1609103692 Tokyo NHK General Television  
Network in Japanese 1200 GMT 14 Sep 92*

[Editorial Report] Tokyo NHK General Television Network in Japanese in its "NHK 21 News" program at 1200 GMT on 14 September carries a report relating to problems with the "slovenly" methods the Russian Navy uses to dispose of its scrapped nuclear submarines.

Newscaster Tadashi Sonoda begins the report: "Now we would like to report to you regarding problems with nuclear controls, as practiced by the former Soviet Union. The carelessness of the former Soviet Union's control of nuclear arms and nuclear reactors is turning into an international issue—for instance last spring, it was discovered that several thousand tons of nuclear waste, as well as nuclear submarines with nuclear fuel in them, were abandoned south of the Arctic Ocean. While such is the situation, NHK recently obtained a photograph of a nuclear submarine which was left abandoned in the water since it exploded in an accident at a port near Vladivostok seven years ago.

"This accident was caused by the explosion of a nuclear reactor. It happened in a nuclear submarine repair yard

near Vladivostok on 10 August 1985. Ten men were killed and adjacent areas were contaminated with radiation."

Video cuts to a black-and-white photo of a submarine, in front of which stands a uniformed soldier with what looks like a geiger counter.

While the picture is on, the voice of an announcer says: "This is a photograph of a nuclear submarine whose reactor exploded in an accident. A steel deck which should have been on top of the nuclear reactor was blown off in the explosion. The submarine was left abandoned with a large hole in it."

Video alternately shows scenes of the repair yard as it looks now and maps showing the general area of the repair yard—the announcer continues to report: "The explosion occurred seven years ago in August 1985, while in the process of changing nuclear fuel at a repair yard in (Chajima) Bay between Vladivostok and Nakhodka. The accident killed 10 and resulted in a large leakage of radiation."

"An area 6 km long and 1.5 km wide southwest of the site of the accident has been off limits until now, and the details of the accident are not known. This photo was taken in December of last year, and the submarine was shown abandoned, with its nuclear reactor left inside. In the port of Vladivostok, other nuclear submarines that have been involved in accidents are simply docked with buoys attached to them. It is clear that the controls practiced by the Russian Pacific Fleet are extremely slovenly."

Newscaster Sonoda returns to video, and says: "According to NHK's Vladivostok office, this is not the only submarine which had an accident involving an explosion which was left abandoned. While the East and the West proceed with efforts to reduce nuclear arms, what are they doing about nuclear submarines which are being scrapped because of their age? You will hear a report on that question from reporter Yamauchi."

Reporter Yamauchi himself does not appear on screen, but his voice explains, while video shows scenes of a shipyard: "This is the only yard in the Far East where the dismantling of nuclear submarines is done, and this is not so far away from the site where that submarine exploded. Right now in this yard, operations are underway to take nuclear reactors out of nuclear submarines that are being scrapped. The dismantling is done according to the following steps—dissecting the submarines into several parts, taking nuclear fuel out of the parts holding the nuclear reactor, and then sealing the reactors. The reactors are then taken out and docked at sea, floating with buoys attached, just as is done with other parts."

"The problem is that the Pacific Fleet has no facilities for burying such nuclear reactors. This yard is supposed to dismantle a total of 35 nuclear submarines, but so far has been able to dismantle only 18—or about half of

them. Because of serious financial difficulties, it can dismantle only one per year. Consequently, the remaining 17 submarines are waiting for their turn with nuclear fuel loaded on board, and in the meantime more than 1,200 security personnel have to be assigned for the security of the nuclear reactors on these submarines. These problems of financial difficulties and manpower for security are making safety controls for nuclear reactors very difficult."

Video then shows Smirnov, the Russian Pacific Fleet Submarine Division head, talking in an interview with NHK [translated from Japanese subtitles]: "We are now constructing facilities to store nuclear reactors which have been removed. But until these facilities are completed, there is no other choice but to leave the separated nuclear reactors floating at sea."

The black-and-white photo of the submarine involved in the explosion briefly returns to the screen. While the photo is on screen the announcer continues speaking: "Reports on accidents involving submarines or on how the nuclear reactors are disposed of are almost never given to residents in general. Neither detailed investigations on radiation contamination nor physical checkups on residents have been done."

Video cuts to scenes of interviews. A Russian woman says [translated from subtitles given in Japanese]: "I have learned about the accident involving the explosion of the nuclear reactor for the first time, and I am very much concerned about possible effects from it."

Another Russian woman says: "The disposal of nuclear reactors should be done more cautiously. They are doing things haphazardly."

A man identified as Tsoi, director of the Coastal Area Environmental Center insists: "It is very dangerous to store nuclear reactors at sea. That is because there is the possibility that radiation contamination will spread very rapidly. The radiation will contaminate living things in the sea, thus affecting the human beings that eat them. Radiation contamination thus affects not only the environment but also human beings."

Video switches to a map of the Russian Far East area, and the announcer continues to explain: "In the Far East there are four places where dismantled nuclear submarines are left abandoned with nuclear reactors on them—at the outskirts of Vladivostok, Kamchatka, the Khabarovsk area and so forth."

Video shows a uniformed Russian officer identified as Captain Chelevkov in an interview. The officer says [translated from Japanese subtitles]: "In the Russian Pacific Fleet, the problem of manpower shortages has become serious. The state is such that we do not have enough men for assignment to dismantle nuclear submarines. As such, it is possible that the disposal of radioactive wastes will become even more slovenly in the future. We cannot deny the possibility of new explosions and radiation leaks occurring in the future."



Reporter Yamauchi appears on video. Reporting from Vladivostok, he says: "The Russian Pacific Fleet—which has so many nuclear submarines assigned to it—does not even have basic facilities for the disposal of nuclear reactors. This fact can be said to prove that Russia has not adequately prepared to cope with speedy progress in agreements on nuclear arms reductions between the East and the West."

Newscaster Sonoda in the Tokyo studio returns to the screen and says: "What we saw is that the problem of nuclear reactor disposal in the former Soviet Union is something that transcends the capabilities of Russia—one country—by itself."

### **TV Program Features Formerly Secret Nuclear Town Chelyabinsk-70**

LD1009220392

[Text] Moscow Teleradiokompaniya Ostankino Television First Program Network in Russian at 1922 GMT on 9 September, in its "Black Box" program, carries a 40-minute recorded feature called "The Closed City", second in its series "The Secret of Nuclear Weapons."

The program begins with an unidentified correspondent introducing clips from a film produced by Mikhail Romm, "Nine Days of One Year," about a nuclear physicist involved in secret work on a nuclear accelerator to achieve thermonuclear synthesis and who ended up in a clinic following repeated doses of radiation.

The fate of such scientists was only revealed in May 1992, when a television crew was permitted to go to a secret nuclear town in the Urals, which was long hidden, even from the CIA.

The crew was allotted nine days to make their film about the closed town. On day one, the TV crew flew to a town which is not designated on any Soviet map. Film of the town is accompanied by some rhetorical questions as to what the town is like and whether Russian nuclear physicists will start to go abroad.

In the hotel, the TV crew heard people speaking about a strange "green release" into the atmosphere in one of the squares on the outskirts of the town. Their escort denied knowledge of any such releases.

Academician Yevgeniy Nikolayevich Avrorin, head of the institute in the town, states that the town was set up to create an atomic bomb. A few details of Avrorin's career are given and how he came to work at the secret nuclear center on the shores of Lake Sinara, near Chelyabinsk and Sverdlovsk. The town was like a back-up center in case the major center, Arzamas-16, should need replacement.

Avrorin speaks about the restrictions imposed on the town's residents, such as the need for permission to invite people to the town, to go abroad, telephone calls being tapped, and mail being checked, which he explains as the danger of the proliferation of nuclear weapons and

the leaking of state secrets. Nuclear missiles abroad are targeted on this town, and therefore its residents are live targets.

Chelyabinsk-70 or Snezhinsk are the names of the town. The configuration of a snowflake, the town's symbol, is reminiscent of an explosion in its outlines, the correspondent says. The film shows various residential districts of the town.

Avrorin says that people's moods have changed as they realized that they have been responsible for something detrimental to mankind, rather than something important and needed.

V.P. Laushkin, a senior research assistant and candidate of Technical Sciences, and V.M. Ivanov, a leading designer, who composed the town's own anthem, are introduced to the TV crew.

Avrorin gives details of how people were selected for work in this town. There were even many non-party people.

Avrorin is interviewed by the TV crew in Moscow before going on a business trip to the United States. Avrorin says that he can now name his institute, address, and telephone number, although for many years he was bound by secrecy. He says that the type of secrecy varies in Russia and the United States. Avrorin's institute is called the All-Russia Scientific Research Institute of Technical Physics. The video features the meeting of scientists in America.

The institute is said to be responsible for the "green release," which the TV crew manages to film. Video shows a townscape with a misty green outline around the buildings and other objects.

On day two, the TV crew, who do not yet have full permission for their filming, are permitted to film the checkpoint at the entrance to the town, which is surrounded with barbed wire and a ploughed strip and guarded by soldiers with machine guns. Filming of soldiers was restricted, and then prohibited completely.

The unidentified correspondent says: "They took us to Lake (Sumgul). Here there was forbidden zone B, at the end of the forties. Our candidates and doctors of sciences, from among prisoners, of course, together with German scientists who had been taken prisoner, under the leadership of the convicted Academician Timofeyev-Resovskiy, carried out top-secret research on the effect of radiation on live organisms. After all, practically nothing was known of that secret phenomenon then. A dangerous background of radiation has persisted up until our days. One finds dirty spots of contamination in places on the soil." The video shows the lake.

In spite of the contamination, the Orlenok pioneer camp for the children from the town is located on the shores of the lake. A howitzer at the camp is shown, which was once at the epicenter of a nuclear explosion. Video shows the pioneer camp.



The town's main sociologist, V.N. Osipov, candidate of economic sciences, recounts that the town was created over night in 1956 and speaks about the demographic situation in the town.

Kirill Ivanovich Shelkin was the first head of the institute, followed by (Sbabakin) in the sixties, and by Academician Avrorin in the eighties. In the next five years, the original scientists, who are in their fifties and make up the town's main potential, will retire. Avrorin speaks about the very small inflow of young specialists to the town, less than 3 percent of new staff are being taken on each year. But the young people in the closed town desire freedom.

A young unidentified man from the town shows the TV crew his cartoons, indicating how the people in the town are like prisoners, bound and gagged, and shows a cartoon of a multi-limbed man with "I will not forget the 1957 explosion" tattooed on his chest.

Academician Avrorin speaks about the danger of a brain drain, about the possibility that people will go and work in the West. In some branches of the Academy of Sciences, almost half of the staff are already working abroad, he says.

On day three of the TV crew's visit to the town, sirens sound while the crew is visiting the town, but people in the streets take no notice. The siren was evidently sounding from the secret production facility.

The "secret production facility" will be dealt with in the next "Black Box" program, the correspondent announces. The date and time of the next segment are not announced.

#### **Radiation Spots Detected in Kursk Oblast**

*LD0909103892 Moscow Russian Television Network in Russian 1600 GMT 8 Sep 92*

[From the "Vesti" newscast]

[Text] Two radiation spots have been discovered on an area of 1.5 hectares in Kursk oblast. Experts think they are a result of Chernobyl. The level of radiation there exceeds the permitted maximum, but in spite of this people are still living in the settlement of Ponyri—for which they are being paid generous compensation: 30 rubles a month, or one ruble per day.

#### **Stolen Radioactive Cesium Believed Smuggled to Estonia**

*PM1609142392 Moscow IZVESTIYA in Russian 10 Sep 92 Morning Edition p 6*

[Yevgeniy Solomenko report: "Deadly Theft"]

[Text] Six lead blocks, each weighing 18 kg, have been stolen from the "Fosforit" association in Kingisepp. Sad to say, thefts from state enterprises, even thefts on far

larger scales than this, do not surprise us any more. But this is a special case because the thieves have stolen a deadly load.

These blocks contain cesium-37—a highly radioactive isotope—under a protective layer of lead. It emits 50 roentgens an hour. At "Fosforit" they use it to charge measuring equipment.

So far the investigation has yielded no results. But it is most likely that the stolen goods have been sent to the Baltic. After all, it is just a couple of dozen kilometers from "Fosforit's" gates to the Estonian border. It ceased to be a secret long ago that many tonnes of contraband metal have been leaving Russia for the Baltic via Leningrad and Pskov Oblasts. In Kingisepp Rayon the Ivangorod customs scarcely have time to fill out official reports on the many cases of smuggling Russian raw materials. It is no coincidence that neighboring Estonia, which has no nonferrous metal deposits of its own, has suddenly become one of the world leaders in the export of nonferrous metals in recent times. It only remains to note that the emergency at the "Fosforit" association is not the first such theft of dangerous radioactive substances in Leningrad Oblast.

#### **Ecological Survey Carried Out at Plesetsk Cosmodrome**

*LD1009191192 Moscow ITAR-TASS in English 1024 GMT 10 Sep 92*

[By ITAR-TASS correspondent Vladimir Anufriyev]

[Text] Archangel, September 10 (TASS)—A special commission has completed the first assessment of the ecological situation on the territory of the Russian cosmodrome in Plesetsk. Ecologists from Moscow, St. Petersburg, Archangel and Plesetsk have examined the cosmodrome facilities, tested the local soil, vegetation, water and atmosphere to determine the level of environmental pollution.

The local population has long since complained that the cosmodrome exerts a negative effect on their vegetable gardens, the surrounding forests, kills fish in Taiga lakes and rivers. The regime of secrecy, which was in force there until recently, did not allow for any official confirmation or denial of these apprehensions. The few ecological expeditions that have worked there during the past year or two pursued only their own narrow goals and engendered more questions than answers.

"The work of our commission is the first step to draw up a comprehensive long-term programme to study the influence of the Plesetsk Cosmodrome on the environment," chairman of the Archangel Regional Ecological Committee Viktor Kuznetsov told ITAR-TASS. "Proceeding from its results, we shall decide whom to enlist in these studies, how much they will cost, and where to take the money from."

### Voronezh Nuclear Power Industry Training Center Profiled

PM2209153392 Moscow Teleradiokompaniya  
Ostankino Television First Program Network  
in Russian 1400 GMT 17 Sep 92

[From the "Novosti" newscast: Video report from Voronezh Oblast by V. Ageyev and O. Nidelin, identified by caption]

[Text] [Ageyev] [video shows power station towers] Sad to say, the reliability and operational safety of nuclear power stations is one of the main problems facing the world community. A group of U.S. nuclear power industry specialists has visited the Novovoronezhskiy training center, which trains nuclear power station operational personnel. Today many of the center's graduates work not only at nuclear power stations in Russia and the CIS but also in many West European countries. The aim of the visit to the center was to discuss questions on possible areas of cooperation in improving the skills of specialists operating water-cooled, water-moderated reactor or VVER power units. The sides exchanged experience gained in the operation of nuclear installations of the VVER type. How is the quality of training that the nuclear power station specialists receive today guaranteed?

[V.I. Duvgiy, deputy director of the AES Training Center, identified by caption] The work of our Novovoronezhskiy training center shows that the training received by students at our center and others specializing in different areas ensures operational safety because the student gets a thorough grounding here, his expertise is thoroughly tested, and as a result he then does a thoroughly good job performing his duties at a nuclear power station. [video shows views of power station, people shaking hands, conference room, interview].

### Newspaper Reports Crash of Nuclear Bomber 20 Years Ago

LD1809105892 Moscow ITAR-TASS World Service  
in Russian 0850 GMT 18 Sep 92

[By ITAR-TASS correspondent Andrey Fomin]

[Text] Chita (Trans-Baykal), 18 Sep (TASS)—A military aircraft capable of carrying nuclear weapons crashed in eastern Siberia about 20 years ago. This sensational report was carried today in the local NARODNAYA GAZETA newspaper.

According to the newspaper the accident occurred not far from the village of Tsagan-Ola in the Aginskiy Buryatskiy national okrug in the Trans-Baykal region. At the site of the accident the military carried out radioactive decontamination and other measures envisioned for the elimination of the consequences of nuclear contamination of an area, NARODNAYA GAZETA reports. But seven local inhabitants got to the site of the accident before that. They all soon died.

A representative of the command of the Trans-Baykal military district was not immediately able to confirm or deny the NARODNAYA GAZETA report.

### Local Political Leaders Call for Presidential Action on Baykal

92WN0756B Moscow LESNAYA GAZETA in Russian  
20 Aug 92 p 1

[Article by V. Kalinkin: "The Baykal - A Trump Card"]

[Text] The representatives of a number of political parties and organizations operating in the Angara region came out with a cutting statement, in which they essentially accused present Russian authorities of being completely inattentive to the problems of the Baykal.

The question, as in the past, chiefly concerns the fate of the Baykal TsBK [Pulp and Paper Mill], and the complete failure of plans and programs to revamp it. At one time, under the pressure of the "Green" movement, plans and programs had been developed by the USSR government, and then by the RSFSR, but were forgotten afterward. The local division leaders of the DPR [Democratic Party of Russia], the Republican Party, the Christian Democratic Union, the "Democratic Russia" movement, and other organizations, have now decided to remind the country's leadership and population that a problem exists. In their statement they announced their intentions to do the following: secure an outcome from the RF [Russian Federation] President's order to stop the cooking of cellulose at the BTsBK beginning in 1993; obtain a government decision to create alternative power beyond the bounds of the lake's drainage basin; and expedite the adoption of a law concerning the Baykal, as well as other measures.

However, in his article published in the local press, I. Shirobokov, a representative of the RF president, called for all those troubled about the fate of the Baykal, to stop creating strife and start cooperating in the name of saving the lake. He also informed Siberians that the president's team was not just dawdling. He said that a new government decree was being prepared, international research on the lake was being organized in the aim of protecting it as a part of the world's UNESCO heritage [United Nations Educational, Scientific and Cultural Organization], and a draft law concerning the Baykal was being prepared for review.

As it turns out, the leaders of the country are doing just exactly what the various parties and movements are so concerned about. However, it is as though the latter does not know about the actions of the former, and as though they in turn forget about their existing opponents, and do not always inform the public about what they are working on in a timely manner, because they are so busy. As a result, an unnecessary confrontation arises. And you unwittingly ask: Is not the Baykal just another trump card that politicians set into motion when they simply have no other?

### **Baykal Memorandum Defines Environmental, Economic Priorities**

*PM2109143592 Moscow ROSSIYSKAYA GAZETA in Russian 16 Sep 92 First Edition p 2*

[Correspondent Gennadiy Gypylov report: "Baykal Begrudged Nothing"]

[Excerpts] Ulan-Ude—V. Saganov, prime minister of the Republic of Buryatia, and Yu. Nozhikov and B. Ivanov, chiefs of Irkutsk Oblast and Chita Oblast Administrations respectively, have signed a Baykal memorandum.

The neighbors agreed on a joint regional economic policy in relation to the "famous sea" and on preserving its natural and ethnocultural environment. [passage omitted]

Priority areas were defined. They are: To restore and preserve the lake's purity, to combine stable economic development and environmental protection in the region, to preserve the cultural and ethnic traditions of the peoples living along its shores, and so on. [passage omitted]

## **WESTERN REGION**

### **Activities of Ukrainian Ministry of Natural Resources 1991-92**

*92WN0691B Kiev ZELENYY SVIT in Ukrainian No 9, Jun 92 p 6*

[Report from Ukraine Ministry of the Environment Press-Center: "The Ukrainian Minprirody—What We Are Working On—A Brief Look at 1991 and the First Quarter of 1992"]

[Text] The year 1991—the year of the proclamation of the independence of the Ukrainian state—was the year of the adoption by the Supreme Soviet of the law "The Protection of the Natural Environment," and the creation of the Ministry of the Protection of the Natural Environment [Minprirody] system in Ukraine.

What typified the past period for the ecological service of the young state, what was done, what are the plans?

#### **1. Natural Resources Utilization Management, State Ecological Monitoring**

The Ministry was re-organized in 1991 after the confirmation of the statute on the Ministry by the Cabinet of Ministers. The entire territory of Ukraine, including the closed defense facilities, was encompassed by ecological oversight for the first time.

The very first decree by the collegium of the new Ministry affirmed that task.

Paramount attention in the work of implementing state ecological oversight was assigned to the most troubled regions, the "sore spots" of Ukraine.

The Dnieper—a sacred national object of Ukraine that is troubled today—became the first such site. Minprirody, according to the results of a study and review, sent a report to the Supreme Soviet and Cabinet of Ministers on urgent measures to revive the ecological situation in the river basin, proposed the creation of an emergency governmental commission and entrusted it with the development of a national program for the rescue of the Dnieper. Work is underway at the Ministry today on the creation of such a program with the participation of a broad circle of scientists and specialists.

Rubyzhne and Lysychansk, Zaporizhzhya and Mariupol—the situation in these ecologically sick cities has been studied by teams of specialists and discussed at labor collectives and at meetings with representatives of public organizations. The results of that work were summarized at sessions of the collegium and were approved, and concrete measures to revive the situation are already being implemented. An analysis of the situation at Kryvyi Rig is in the work plans for the second quarter of 1992.

A special commission created by Minprirody investigated the ecological situation in the basin of the Ros River, a standing interoblast commission was created at council-seminars in the city of Bila Tserkva and a schedule for the revival of the Ros was developed.

Serious attention was devoted to ecological oversight in the sphere of agricultural production. The preparation of instructions for the protection of the natural environment in the application, storage and transport of pesticides is being completed. The instructions will be approved by Minprirody, the Ministry of Agriculture and the Ministry of Health of Ukraine, and they will have legal status.

Operative measures were adopted to halt the illegal attempts to bring into Ukraine—especially Transcarpathia and Lvov Oblast—toxic wastes and dirt under the guise of raw materials. The necessary contacts with the border, customs and transport services of Ukraine, as well as the environmental-protection bodies of neighboring countries, have been established for that purpose.

#### **2. Protection and Enrichment of Flora and Fauna, Preserve Affairs**

The international "Trees" act aimed at resurrecting the green cover of the planet is supported in Ukraine.

Work pertaining to the completion of materials for the registration of the Carpathian International Biospheric Preserve continued, and materials were submitted to the UNESCO Secretariat for review. Materials were prepared for the creation of the Golosiyivskyy Lis National Nature Park and the Batkivshchyna Shevchenka State Historical-Cultural Preserve. An expert council on the protection of bison has been created.

### 3. Ecological Expert Analysis

Requirements were raised toward the planning materials that come in for state ecological expert analysis. More than a third of the material received for the Ukrainian Minprirody system overall, and more than half of that for the central apparatus, was not consented to or was sent back for refinement. The principal shortcoming of the planning documentation was the poor quality or lack of materials for evaluating the effects of the planned activity on the environment.

Among the materials that did not meet the requirements of ecological expert analysis, and were thus declined, were plans for the utilization and protection of the water resources of Ukraine to the year 2010, the development and placement of water-management and land-reclamation facilities for the period to the year 2010, the development and placement of enterprises in the chemical and petroleum-refining industry to the year 2010, the technical and economic substantiation for production at the Kiev TETs-7 [heat and electric power plant] and high-speed tram lines in Kiev, and a new port at the mouth of the Danube River and navigable approaches to it.

### 4. Formulation of a System of Environmental-Protection Legislation

Minprirody, on the basis of the "Protection of the Natural Environment" law, is working on the creation of a legislative foundation in this sphere. A conceptual framework for the ecological law of Ukraine has been developed, and its realization requires the paramount development of 17 legislative and close to 30 standard and as many departmental legal documents. A plan for their preparation has been developed, and a Commission to Inventory the Standards Base and an ecological-law expert council have been created.

The law "Natural Territories and Sites That Are Specially Protected" was submitted and approved in its first reading at the Supreme Soviet. A series of legislation has been prepared and transmitted to the Cabinet of Ministers for consideration: "The Protection and Utilization of the Plant World" (developed for the first time), "The Protection and Utilization of the Animal World" (a new edition), and "The Protection of the Air" (a new edition).

Drafts have been prepared of changes and additions to the Code of Administrative Offenses and the Civil and Criminal codes, as well as a statute on overseeing protected areas of the natural environment and a series of other standard documents.

### 5. Economic and Scientific Aspects of the Utilization of Nature and Monitoring of the Environment

The transition to market relations requires changed priorities for the implementation of state ecological policy. Administrative influence in this sphere is preserved, and will even grow stronger. But while this used

to be the only way of ensuring the optimal utilization of nature, under market conditions the paramount role begins to be played by economic levers. Minprirody is working on developing such an economic mechanism for the utilization of nature and ensuring its realization.

The government has approved a Procedure for the Designation of Fees and Penalties for the pollution of the environment and a Statute on a Republic Extra-Budgetary Fund for the Protection of the Natural Environment that were developed by the Ministry with the participation of scientists and specialists.

Payment is exacted under market conditions not only for pollution, but also for the use of natural resources. It is expected to be instituted in Ukraine as early as 1992. Minprirody has developed for this purpose a draft decree of the Cabinet of Ministers, "Temporary Standards for Fees for the Special Utilization of Natural Resources," and a procedure for the setting of fees and penalties.

A conceptual framework has been produced for a State Program of Ukraine for the protection of the natural environment and the efficient utilization of nature, along with the section "Ecological Security" for the Conceptual Framework of the Security of Ukraine.

Scientific institutions that were created in the Minprirody system over the last six months were enlisted for the performance of this work—the Ukrainian Scientific Center for Water Protection (UkrNTsOV), in Kharkov, and the Ukrainian Scientific Center for the Ecology of the Sea (UkrNTsEM), in Odessa.

### 6. Ecological Information and Education

A system for the gathering, processing and dissemination of ecological information is one of the foundations on which the environmental-protection strategy of Ukraine is founded. A joint order of Minprirody and the Ministry of Health of Ukraine was issued in January of 1992 for the further improvement of this work, by which the central and their peripheral subdivisions are obligated to collaborate in regard to the exchange and dissemination of information—organize joint press-centers, fine-tune the network of operative ties with the population by "hot line," hold regular press conferences and circulate printed materials. That work has already begun.

The conceptual framework for the law "Ecological Education and Training" is being created, and is envisaged for consideration at a session of the collegium of Minprirody in the second quarter of 1992. Members of a public expert council that has been created within the Minprirody system will take part in this work.

The Minprirody of Ukraine has reached an agreement with the U.S. Environmental Protection Agency pertaining to the joint establishment of a Ukrainian-American Center for Ecological Education and Information in Kiev. The agency is shouldering the provision of



equipment and educational programs, professional assistance in the organization of studies by Ukrainian specialists, access to the information of U.S. computer systems and advice of government experts in the fields of ecologically clean technologies.

### 7. International Collaboration

The Ministry has become significantly more active in many other fields of work on protecting the environment as well. A delegation of the Ministry of Ecology of France, the U.S. Environmental Protection Agency and two teams of experts from the World Bank and the Global Ecological Fund visited Kiev in the first quarter of 1992 by invitation of Minprirody. Three programs of ecological assistance were developed with the participation of experts from Minprirody—for the Black Sea, the Danube delta and a biospheric preserve in the East Carpathians. Negotiations are underway with the World Bank on assistance and credit to revive the Dnieper and Donbass regions.

### Ukraine Faces 'Catastrophic' Ecological Situation

92WN0691A Kiev ZELENYY SVIT in Ukrainian No 9, Jun 92 pp 4-5

[Article by V. Kryshchenko under the rubric "Where Do We Live Today": "Ukraine: Man Against Nature"]

[Text] *The state of the environment in Ukraine is catastrophic—everyone would agree with that today. As well as with the fact that the main reason for this situation is the rapacious treatment of resources and the unprecedented man-made pressure on nature. Approximately five percent of environmental pollution is concentrated in Ukraine, which occupies less than one percent of the world's land area. Our ecological problems thus have considerable (unfortunately, negative) international significance.*

*It is, of course, extraordinarily important for the whole world to comprehend the pressure of man on the environment. We will select from many possible models the most tested and extensive, namely the effects of man on the basic spheres of his existence—water, land, air.*

### Murky Water Is Flowing...

We will take, as a start, the Dnieper and its artificial reservoirs. The Slavutich, as is well known, has six of them—the Dniprovskoe, Dniprodzerzhynskoe, Kanivskoe, Kakhovskoe, Kyivskoe and Kremenchukskoe. The area of these reservoirs is 410, 567, 675, 2,155, 922 and 2,250 square kilometers respectively, or a total of almost 700,000 hectares. Close to a million tons of grain could meanwhile have been obtained from the inundated lands. The destroyed orchards and gardens could have provided 3—4 million tons of fruits and vegetables annually. Pastureland and floodlands rich in fish and fish resources were lost in general. The scope of these losses can be assessed by recalling that fishing was the principal occupation for the Zaporizhzhya Cossacks,

while the fish were almost the sole source of protein, providing 90 percent of the body's requirements for it. Today there is less than two kilograms of fish a year for each inhabitant of Ukraine.

And, the most importantly—millions of people were moved to new cities and towns, which signified a colossal expenditure for construction and an enormous amount of land occupied by the new construction. The inundated lands constitute the core of the historical natural habitat of the existence of Sarmatians, Scythians, Antais, Poles and Ukrainians—that is, our people. Priceless monuments of Trypilsk and Chernyakhiv culture, Scythian times, Kievan Rus and, especially, the Zaporizhzhya Cossack Host have all gone underwater.

As a consequence, Dnieper water—after the damming of the river and the digging of canals—irrigates approximately 600,000 hectares of land, that is, **less than the area of the reservoirs that were created**. The agricultural crop yields on those lands, after a certain temporary rise, will moreover drop steadily in the future.

We will continue, however, on the subject of water. The average annual flow at the mouth of the Dnieper is 52.4 cubic kilometers. Scientists estimate the aggregate amount of polluted water in the Dnieper at 22 cubic kilometers, that is, it is **almost half of the annual volume of the river**. More than ten billion cubic meters of untreated sewage were poured into bodies of water in Ukraine (lakes, ponds, rivers, the sea) over the last Soviet five-year plan.

The chief polluters of the bodies of water (80 percent) are ferrous and non-ferrous metallurgy, electric-power engineering and the coal, pulp-and-paper, petrochemical and chemical industries. The celebrated kolkhoz/sovkhoz system is constantly increasing its contribution. Other agencies are doing the same as well.

But that water, in whatever way, returns to the reservoirs. The portion of the water that is irretrievably lost (at least, for Ukraine) is also considerable. Here is just one example: a million-watt reactor at an AES [nuclear power plant] annually "drinks" close to 30 million cubic meters of water. Water is naturally worth its weight in gold around an AES. Just one example: The Khmelnytsky and Rivne AESs simultaneously deprive almost a million inhabitants of these regions of their normal water supply. The further development of these plants has entirely absorbed the resources of the Stir, Goryn and some other rivers; a shortage of water has begun to be felt in Rovno as well.

The criminal policy of resource utilization has also caused the disappearance of **almost 20,000 small rivers** from the map of Ukraine over the last 20—30 years. And that number is no less frightening than the millions of victims of starvation, the millions who were repressed and perished in the wars or the thousands of forgotten "unpromising" villages. The small and medium-sized rivers that remained are extremely polluted. The "safe" Volyni Stir and Luga are polluted with copper ions (with



thirteen and fourteen times the GDK [maximum allowable concentration] respectively). The Turiya has ammonium nitrates and phosphates. And what can be said about the rivers with industrial giants or large cities on their banks? **There are 60 cities and 519 urban-type settlements in Ukraine that do not have centralized sewage systems.** The values over the GDKs for rivers that flow through large cities sometimes reach **several hundred times**, as, for example, in the Kiev rivers and streams of Lybid, Nyvka and Syrets.

#### **If You Are Still Breathing—Breathe as Little as Possible**

There are no unequivocal data on the extent of air pollution. But we should obviously trust the scientists—who estimate the annual amount of harmful emissions into the atmosphere at 20 million tons—and not the agencies, which are prepared to report a “reduction in harmful emissions.” **Only the facts that half of industrial enterprises in general do not have dust and gas collectors and that the state of the air basin is causing serious harm to health are perhaps beyond doubt.**

The effects of air pollution in Zaporizhzhya are thus equivalent to a radiation dose of 150 rems over 30 years—that is, is mortally dangerous. Dniprodzerzhynsk, Donetsk, Kiev, Komunarsk, Kryvyi Rig, Lysychansk, Makiyivka, Mariupol, Odessa and Syevyerodonetsk are approaching the level of pollution of Zaporozhye, where the content of harmful substances in the air is no less than 15 times greater than the GDK. Kirovograd, Rivne, Rubizhne, Chernivtsy, Kherson, Kramatorsk, Nikopol, Sumy and Cherkasy, where the level of excess over the GDK fluctuates around the 10 mark, are not far behind. It is no wonder that Ukraine has moved into one of the leading places in the world in the rate of just oncological and cardiovascular disease and illnesses of the respiratory tracts.

#### **Land and No People**

The foundation and measure of any wealth is land. We will therefore analyze land use in our state. And we will see that **the intensity of utilization of the land in Ukraine has virtually no analogues around the world.** And that is leading to its depletion and destruction, as convincingly testified by the actual data pertaining to the contemporary patterns of land utilization.

Almost 92 percent of the land stock of Ukraine is in economic circulation, and moreover predominantly in agricultural lands (close to 70 percent of the overall area of the nation). We will compare the corresponding values from foreign countries. The United States, France and Germany have set aside from 20 to 30 percent of their territory for agricultural lands, of which 25 percent is plowed in the United States, 48 percent in France and 37 percent in Hungary. That is, whereas the United States has plowed up 16 percent of its land stock, Ukraine has plowed some 57 percent. The negative impact of human

activity is manifested in two principal areas—the taking of land, and the loss of agricultural space and depletion of the soil.

Losses of the former type are caused first and foremost by the building of reservoirs. They occupy 2.1 percent of the total land area of Ukraine. Industrial facilities occupy about 250,000 hectares and the extraction of minerals has led to the destruction of 226,000 hectares, together constituting another one percent of the area of Ukraine. Now taking into account that the area of agricultural lands has been reduced by two million hectares over the last 30 years (of which tillage was more than one million hectares), and not thanks to the growth of forests or their transfer to preserve status. The annual rate of the taking of land for new facilities has already exceeded 100,000 hectares. Therefore, if the trend is preserved for another few decades, all of Ukraine will become a trash heap covered with industrial monsters, and not a single ecologically clean piece will remain on its territory.

Land that is contaminated by radiation is irretrievably lost. **It actually reaches 4-5 percent of the territory of the country.**

Electrical-transmission lines (LEP), and especially high-voltage lines, are a special topic. The accelerated development of electric-power engineering in Ukraine led to the fact that the total length of 750-kV [kilovolt] lines has increased by 13 times over recent decades, along with five times for 220-, 330- and 500-kV lines. Since the functioning of LEPs entails a threat to the health of people and the taking of land for their construction along with a health-safety zone, it has turned out that electric-power engineering has shown another of its unattractive sides to the people: **close to 20 percent of the population resides in zones of enhanced (impermissible in health-safety terms) electromagnetic hazard;** the area of lands taken connected with LEPs is more than two percent of the territory. Even proceeding from a significantly reduced value for the land, the economic losses from the erection of innumerable LEPs exceed 25 billion rubles in 1990 prices.

Does Ukraine need so much electric power? The answer is unequivocal—no. Even now Ukraine generates 40 billion kWh [kilowatt-hours] of electric power more than it consumes. And the hard currency for the sale of that power, for the most part, still sits in accounts at Moscow banks.

Now about the losses caused by the extensive utilization of the land stock and its super-exploitation. Fourteen million hectares are located on slopes of varying steepness. The eminent scientist V. Sayko calls plowing on slopes criminal, insofar as every year some 600 million tons of soil are lost as a consequence. The overall area of eroded soil in Ukraine is 11.7 million hectares as a result, and moreover the area of the eroded soils over the last 25

years has increased by two million hectares, including 1.5 million of arable land. Almost 20 million hectares suffer wind erosion.

The activity of the land reclamation people is another cause of the destruction of lands. Out of the 5.5 million hectares of wetlands, more than three million have already been drained, and in southern Ukraine 1.2 million hectares are irrigated. The plans (initiated under mature socialism) are grandiose: to bring the area of irrigated lands to 4-4.2 million hectares and drained lands to 4 million. This activity is not justified in either an economic or an ecological respect. It turns out that the crop yield of grains over the last 15 years has gone up virtually not at all, and has even declined in some places. As concerns the reclaimed—that is, the “improved”—lands, the yield of winter wheat on them in 1985 compared to 1970 had declined by 2.2 percent, spring barley by 6.4 percent, sugar beets by 9.5 percent and sunflowers by 4.4 percent. The trend is preserved today as well.

V. Vernadskyy noted in 1916 that Ukraine (only that part of it that was part of the Russian empire) provided 4.1 percent of the world's production of wheat, 3.9 percent of the oats, 8.5 percent of the rye and 14.3 percent of the barley. It provided some one billion poods in all, or 7.1 percent of the aggregate world production of grain. And that was from a region that occupied just close to 0.2 percent of the world's land mass.

The ratios have changed since then. Although the gross harvest and the yield of grain crops in Ukraine has increased somewhat, the world community has developed at a considerably faster rate. Today the share of Ukraine in world grain production is about 1.5 percent. There are, of course, quite a few reasons for this. But the main one is the the ruthless treatment of both the producer of the grain himself—the peasant—and the land that gives birth to that grain.

The problem of land utilization is unfortunately not exhausted with this. Areas that are under the jurisdiction of the military agencies—formerly of the USSR and now of independent Ukraine—are effectively uncontrolled. The upper layers of the soil have been blown off at many ranges, and others have been turned into dumps. Our border zones are also dropping out of land utilization. The border with Poland, for instance, runs along the Western Bug for a distance of 363 kilometers. And whereas people on the Polish side have no obstacles to the use of the Bug, on our side the strip along the border, both the Bug and the territory on its banks, have been completely cleared of people. The situation is analogous for the Zakarpatti (Tysa), the Bukovyni (Prut) etc.

The situation in Ukraine with forestry—which, it would seem, has to further the rectification of negative ecological trends—is quite unsatisfactory. A clear trend of the destruction of forests, on the other hand, is discernible over the last few centuries of the colonial status of Ukraine. Some 3.3 million hectares of forests were

destroyed from the end of the 18th century to 1914, and 669,000 hectares since 1923. The area of forests stopped declining only in the middle of the 1960s, and even started to grow somewhat (1.4 percent over the last 25 years). Forests today occupy about 14 percent of the territory of the country, which is less than the developed European states (forest covers more than 25 percent of the territory of Poland, Spain and France).

It should be kept in mind, however, that the real situation of forestry is much worse than could be imagined using the “correct” figures for forest area overall. Just four percent of the total forest area, or 0.5 percent of the territory of Ukraine, is mature forests (having a natural structure). The rest is primarily thin forest, forest plantings and even bushes, and moreover about 250,000 hectares are infested with pests and diseases. And after the Chernobyl catastrophe the greater portion of the forests have in general dropped out of utilization, insofar as Polissya itself, today contaminated with radiation, constitutes the lion's share of the forest stock. The rate of forest reproduction and creation also does not hold up to criticism.

A colossal discrepancy therefore exists between the depleting and rapacious utilization of nature, on the one hand, and the need to provide a normal living environment for the citizens of Ukraine and the nation overall, on the other. We will thus consider some possibilities for resolving existing problems.

#### He Who Can Save Himself Has a Chance

It is superfluous to say that an absolute condition for any acceptable solution to the accumulated problems is the immediate protection of any remaining unspoiled parts of nature, the observance of legislation for the protection of the environment, the creation of ecologically clean types of technologies etc. The strict observance of existing regulations must therefore be considered an essential, but not sufficient, measure for solving ecological problems.

Fundamental change is needed in the economic mechanism (many have already written about this). Significant reserves also exist in the area of improving technologies or the economy proper. One could reduce the consumption of electric power so much through the conversion of the metallurgical complex to new technologies in Ukraine alone that the saving would be equal to the total capacity of the four Chernobyl AESs.

We will be realists, however. The bureaucratic-agency structures, first of all, are not fulfilling the existing legislation. Second, if the requirements of Minprirody [Ministry for the Protection of the Natural Environment] are fulfilled even to the ideal, ecological catastrophe could only be delayed but in no way eliminated entirely. It is our profound conviction that the discussion should also concern a set of measures to “restore” the nature of Ukraine.

The corresponding work should have been based on an integrated conceptual framework for the ecological and cultural development of Ukraine—which is, unfortunately, still lacking. Then, taking accumulated theoretical experience, existing realities and general human values into account, one could have discussed what follows. The restoration work should be divided into long-term (prospective) and current (immediate). While the performance of the former will require significant expenditures and time, the latter should be realized as early as today.

The long-term measures should be aimed first and foremost at removing significant tracts of land from industrial (including agricultural) utilization, so as to bring them into conformity with scientifically substantiated standards for preserve areas. We would remind you that according to them, biospheric preserves (national parks as well) are 10–12 percent, and natural ecosystems (forests, meadows, steppes, bodies of water) are 30–50 percent. The representation of all biogeographical zones and biota should be ensured therein. Some might call such proposals utopian. But the realities are such that sooner or later these actions will have to be realized, and thus undoubtedly are better done as soon as possible.

It should be noted that botanists of Ukraine under the leadership of Academician Yu.R. Shelyaga-Sosonka of the Ukrainian Academy of Sciences quite recently accomplished pioneering—and in essence unique—work on determining prospective networks of preserve locations in Ukraine. According to these proposals, the creation of a string of preserve facilities is envisaged, in particular biospheric preserves (Poliskyy, Kanivskyy, Dunayskyy, Karpatskyy, Krymskyy), state environmental national parks (Dniprovskyy, Desnyanskyy, Mezynskyy, Ichnyanskyy, Kyivskyy, Cherkaskyy, Medobory, Central Podilskyy, Donbaskyy, Dniprovsko-Buzkyy, Nuzhnodnistrovskyy, Svydovetskyy, Synevirkyy, Krymskyy), state preserves (South Poliskyy, Serednosedymyskyy, Roztochchya, Kemenetski Gory, Dnistrovski Stinky, Chornolisko-Dmytriievskyy, Kholodnyy Yar, Yelanetsky, Kryvolutskyy, Kalmiuskyy, Obytochna Kosa, Tarkhankutskyy, Kerchenskyy) and a number of sanctuaries and natural artifacts of state significance. **But nothing has happened—this program should be instituted as quickly as possible, which the official bodies are not very willing to do.**

Other general steps must obviously also be taken in relation to protecting the environment. They should include:

- a complete ban (moratorium) on extensive industrial production, with a corresponding ban on the taking of new plots of land for industrial facilities, the building of cities etc.;
- announcement of the national acquisition and imparting of the status of preserves to the large and medium-sized rivers of Ukraine—the Dnieper, Danube, Dniester, Southern Bug, Western Bug,

Desna, Prut and North Dnests; a review of the concepts of water-resource utilization with an orientation toward eliminating gigantic reservoirs;

- imparting of the status of preserve and cultural (or rather, anti-cultural) artifacts to the Chernobyl woodlands (the “zone”), and the creation on the basis of them (under the aegis of UNESCO) of a standard biospheric preserve from the standpoint of an undesirable (catastrophic) future. Reveal information on the locations and areas of military facilities, and especially military proving grounds, with the prospect of reducing their numbers to the level of minimal requirements;
- taking under protection existing landscape parks and the renovation of lost ones that are models of traditional harmonious land utilization, including tracts of forest that were created by man in the center and south of Ukraine (Velyko-Anadolskyy, Ratsynskyy, Inguletskyy, Staro-Berdyanskyy etc.). Make fundamental changes in forestry policy in the direction of expanding the rate and area of forestation; and
- the immediate recultivation of lost lands (quarries, spoils dumps, tailings heaps, dumps etc.), and the performance of anti-erosion work; the renewal of the lost small rivers of Ukraine.

As concerns other measures that do not yet require particular state tutelage, it is necessary to insist first and foremost on the creation of local (rural, village, suburban etc.) standard sections of nature. This work itself could lead to the creation of truly common (albeit delicate) networks of preserve facilities.

V.V. Dokuchayev, B.O. Keller and other naturalists have written at times about standards of nature, taking it to mean chiefly a unique kind of measure for evaluating the changes made by man on other natural realms. The standard can thus be a small grove, an isolated terrain feature, a swamp, a small lake, a planted orchard, a local stream etc. The fact that we avoid a selective, even elitist approach to the sites protected is very important in this case. Since we are usually talking about natural artifacts (even of local significance), their exceptional quality is foreseen. The standard section is an ordinary section, although, perhaps, less disturbed by man than neighboring ones. The search to create and protect standard sections will thus help, first of all, really to promote the creation of most extensive networks of preserve sites and, second, to reproduce the nature of Ukraine itself in its standard appearance, and not just from the view of outstanding or exceptional representatives of it.

**It is time to understand—no one aside from us ourselves will destroy nature in Ukraine.**

## CAUCASUS/CENTRAL ASIA

### Scientists Disclose 'Nuclear Cloud' After First A-Bomb

LD1409190592 Moscow Russian Television Network  
in Russian 1000 GMT 14 Sep 92

[From the "Vesti" newscast]

[Text] Following the explosions at Semipalatinsk test site, a nuclear cloud penetrated into Kuzbass, according to Kazakh scientists who are members of the international antinuclear movement Nevada-Semipalatinsk. After the explosion of the first atom bomb, the dose affecting the Siberian region exceeded seven rem, which is far above the level permissible for human beings.

### Victims of Nuclear Tests in Semipalatinsk Need State Aid

OW1709180892 Moscow INTERFAX in English  
1453 GMT 17 Sep 92

[Following item transmitted via KYODO]

[Text] Forty percent of the children born in the regions of the Altay territory bordering on the Semipalatinsk nuclear testing ground (Kazakhstan) die shortly after birth. Since 1950, the number of women suffering from cancer and gynecological diseases has increased 10 times. Seventy five percent of women living in these regions are seriously ill.

This information was disclosed during a medical conference in Barnaul by representatives of the Altay State Medical Institute which had examined women in the Uglovka, Tretyakovo, Lokot and Aleysk regions of the Altay territory.

The speakers noted that according to official sources the surface and air tests were carried out in Semipalatinsk from 1949 till 1963. Subsurface tests were carried out till 1991.

The participants in the conference, who represented 46 academic centers and medical institutes, stated that all of the victims should be given medical aid within the framework of a state programme.

### Turkmenistan Suffers Rise in Air, Water Pollution

92WN0756A Ashgabat TURKMENSKAYA ISKRA  
in Russian 7 Aug 92 p 1

[Unattributed report: "Ecologists Sound the Alarm"]

[Text] The ecological situation that has taken shape during the first half of the year in several regions of Turkmenistan is causing great alarm.

As reported by Goskomstat [State Committee for Statistics], 58 enterprises in the republic increased their emission of harmful substances into the atmosphere during

the first half of the year. Among them were enterprises from both the "Turkmengazprom [Turkmen Gas Industry]" corporation, and the "Turkmenneft [Turkmen Oil]" production association. Compared to the same period last year, emissions of harmful substances into the atmosphere have increased by 26,000 tons.

Matters were no better during the first half of the year in the republic's bodies of water. In comparison with last year, the content of sulfate ions in the water has grown. In the Kara Kum canal, the Amu Darya, the Murgab, the Kushka, the Sumbar, and the Shavat canal wastes from petroleum products have appeared.

All of these violations alarmed ecologists, and became the reason for stricter demands on leaders of the enterprises and organizations failing to observe environmental protection measures. In correspondence with Turkmenistan's new laws "On the Protection of Nature," and "On Increasing Liability for Violations of Ecological Laws," proceedings were instituted under administrative law against 442 officials and individual citizens in the first six months of the year alone.

## BALTIC STATES

### German Firm Ships Industrial Waste to Estonia

92WN0769B Moscow IZVESTIYA in Russian 8 Sep 92  
Morning Edition p 4

[Article by Yevgeniy Bovkun, correspondent of IZVESTIA, Bonn: "Waste Under the Guise of Assistance: A German Firm Is Shipping Industrial Waste to the Baltic States"]

[Text] Having appeared on television, the FRG minister of ecology, Klaus Toepfer, called on his East European colleagues to control their industrial firms more effectively that conclude deals with Western partners in order not to allow the pollution of the environment with the "waste of Western civilization.."

The authors of the broadcast were more concrete. They reported that some German enterprises, making use of the incompetence, thoughtlessness, or strained situation of the Eastern partners, foist off on them the burial or utilization of harmful waste materials of their production, even if the relevant conditions for this do not exist.

By way of example, reference is made to information to the effect that the Duesseldorf prosecutor's office is now investigating the circumstances of the ecological pollution in Estonia, of which the Asian Trade GmbH firm (ATG) from Northrhine Westphalia is guilty. As is well known, Tallinn is experiencing difficulties in the supply of the city with electric power, about the reasons for which we can have a special discussion. But ATG, it would seem, found the way out of the difficult situation. It proposed to bring from the FRG old automobile tires and use them at the local electric power station as fuel, that is simply to burn.

It doesn't matter that the electric power station is absolutely unadapted for this. The German partners promised to reequip it. For this, true, about 40 million German Marks (DM) would be required. The profit obtained promised to be considerable—DM 180 million a year. However, the specialists of ATG did not hurry to start the promised modernization. Meanwhile the batches of processed automobile rubber arriving by sea have already succeeded in sufficiently cluttering up the port and have created a serious ecological threat.

But, perhaps, the most criminal thing consisted in the fact that the transport with the waste materials brought for destruction to Estonia was registered by the ATG firm as actions "of humanitarian assistance!"

The tricks of the "waste mafia" will become a subject of discussion at the time of the meeting which K. Toepfer intends to hold this month with his colleagues from Eastern Europe.



## REGIONAL AFFAIRS

### European Consortium To Produce Fiber-Reinforced Plastic Car Engine

92WS0706D *Toddington NEW MATERIALS*  
*INTERNATIONAL in English Jul 92 p 8*

[Unattributed report: "Spain: Plastic Engine Team Win a Bright Award"]

[Text] Although work in Ford's plastic engine (under a BRITE programme) has been concluded, Ford claims it has already made progress in its development work on fibre-reinforced composites. Many of the lessons learned from the project will be incorporated in forthcoming Ford products, the company adds.

Early examples of this will first be seen in motorsport versions of the company's new cars, where further evaluation can be undertaken. Escorts and Sierra RS Cosworth motorsport derivatives will be fitted with undershields made from electroformed moulding tools, using materials which are combinations of those used in the plastic engine's sidewalls and oil pan.

The use of these materials and of new techniques in manufacture will permit major reductions in the cost and the production lead time for fibre reinforced components.

Recently a European consortium of universities and component manufacturers led by Ford engineers received a special award for its work in designing, developing and testing a plastic engine. The award came from BRITE-EURAM II, the European Community's collaborative research programme in the area of industrial and materials technologies.

The award was presented during BRITE-EURAM II's Expo 92 conference in Seville. It recognises the potential environmental benefits of the engine, which in the course of testing revealed significantly lower levels of noise and improved emission and fuel efficiencies, when compared with a conventional power unit.

The project to produce the plastic engine had been under way for three years when it was completed in 1990. The consortium, led by a team of Ford engineers working at Ford's Research and Engineering Centre at Dunton, Essex, involved Nottingham University, the National Engineering Laboratory in Glasgow, GKN Technology, DSM Resins and DSM Research of the Netherlands, Vetrotex St. Gobain of France and Galvanoform of Germany.

The experimental 1.04-litre single overhead camshaft four cylinder engine has two inlet and one exhaust valve for each cylinder and, after laboratory testing, completed a road test programme in a Ford Fiesta. The design uses metal for its combustion chambers, cylinders and moving mechanical parts with an assembly of bonded plastic shell mouldings supporting the core structure.

This concept required the development of special fibre-reinforced plastic (FRP) materials for stressed components. In the plastic engine, these FRP materials are used to form the sidewalls and the front casing, which effectively replace the outer skin of a conventional cylinder block. This load-bearing assembly also carries the alternator, twin distributorless ignition coils and oil pump. The cam cover and oil sump pan are also moulded in FRP.

### Nordics Worried About Arctic Nuclear Dumping

92WN0763B *Stockholm SVENSKA DAGBLADET*  
*in Swedish 27 Aug 92 p 11*

[Article by Elisabeth Crona: "Nordic Cooperation on Arctic Environment: Atomic Waste in the Barents Sea Makes Norway Uneasy"]

[Text] Nordic foreign affairs ministers gave a clear signal today in favor of a new arctic cooperation based on a Norwegian initiative. It will take the form of a conference on 11 January between the Scandinavian countries and Russia, which all parties have now agreed to.

The cooperative effort will primarily deal with the environment and nuclear safety. Atomic waste in the Barents Sea is making the Norwegians very uneasy. They have already established contact with the Russians in that area, but they wish to have a Nordic framework for work in the future.

### A Flowering Arctic

It is no accident that Norwegian Foreign Affairs Minister Thorvald Stoltenberg (Labor Party) placed the meeting with his Nordic colleagues in exotic Spitsbergen, 1200 miles from Oslo. For some months now he has been discoursing on the arctic region, conjuring up a vision of a blossoming future and the possibility of gradually establishing new trade routes between Asia and Europe over the northern route.

There are also strong domestic political grounds for pursuing this issue and for driving it home with the other Nordic governments: He is working to get northern Norway, with its adamant opposition to the EC, to see a future in a "regional Europe," an arctic Norway that can receive economic support from the EC's structural funds.

In the same vein, Prime Minister Gro Harlem Brundtland concluded recently, at the meeting of prime ministers in Bornholm, that the Swedish response was positive because it pointed up the potential for getting EC support for arctic agriculture.

Swedish Foreign Affairs Minister Margaretha af Ugglas responded positively to the Norwegian initiative. While the chartered flight circled over "Svalbard's endless, wilderness expanses in brown and snow white," she told SVENSKA DAGBLADET that the Ministry of Foreign

Affairs has done its own analysis of this region's burgeoning potential. Very soon she will appoint an ambassador to the arctic, Jan Romare, and in the fall she intends to hold a seminar in order to prepare for the January meeting in Kirkenes.

#### Evident Interest

The Nordic political interest is very evident. Some weeks before the meeting of the foreign affairs ministers, the presidium of the Nordic Council held its meeting—also on Spitsbergen, and also on the Labor Party's initiative. Norwegians have long felt that Nordic discussion dwelt too much upon the Baltic region and on the environmental destruction of the Baltic Sea. During the same period there were numerous reports of an enormous dumping of atomic waste into the Barents Sea by the Soviets.

However, in Moscow, the Kola Peninsula, despite the severe damage to its environment, has a hard time getting included into the 20 areas given highest priority for environmental investment. The Norwegians are currently hoping that international attention will jockey environmental work on Kola into a better position.

According to the Norwegian plan, which will be further developed during the autumn months, cooperation on the arctic will first and foremost concentrate on stock-taking and investigation of nuclear safety in the area.

It is necessary to take steps now, during the political thaw, to create civilian contacts with the Russians. Military harbors should be converted to accommodate civilian cargo, a telephone network must be developed, and industries and railroads built. This is the shape of Thorvald Stoltenberg's vision. And its future includes an opening of the North East passage.

#### Funding for Baltic Cleanup Plan in Doubt

92WN0763A Stockholm DAGENS NYHETER  
in Swedish 27 Aug 92 p 6

[Article by Erika Bjerstrom: "Baltic Sea Awaits a Cure: Treatment Postponed Despite Alarming Diagnosis"]

[Text] *Some 132 trouble spots around the Baltic have been identified, nine of which are found in Sweden. These are locations where the worst discharge into our unique inland sea occurs. Thus far no country has offered to contribute to the cleanup bill of 130 billion kroner.*

The rockfaces of Stockholm's archipelago, which the green slick is taking over year by year, look out over one of the 132 trouble spots. Stockholm has landed on the list because large amounts of nitrogen are deposited in the Baltic from sewage treatment plants, summer cottages, ships, and automobile traffic.

Now everyone is expectant. A gigantic surveying project has been completed. The task force, appointed by the prime ministers of the states around the Baltic, finished its report in April.

Environmental bureaucrats, researchers, and economists have worked out a very specific plan of action for the restoration of the Baltic Sea.

The goal is to reduce the pollution sufficiently to restore the Baltic Sea to what it was in the 1950's. That means that all pollutants must be reduced by 70 to 80 percent.

#### Approved by Everyone

The plans have been approved by all the states and by the Helsinki Commission. Four international banks have participated in helping to mobilize capital.

Yet how the program is to be financed is still not decided. In March the ministers will meet in Poland in order to discuss this question.

"We have done our part as far as research is concerned. Now the politicians must shake down the money," said Prof. Bengt-Ove Jansson of the Askos Marine Biology Laboratory.

The report indicated 132 areas where action is required if the Baltic Sea is not to suffer an ecological collapse. The pollution consists of urban wastewater, industrial effluents, mining waste products, fish farms, agriculture, and animal husbandry.

There are 29 trouble spots which have high priority. Among these is the building of waste treatment plants along the Polish rivers, the Oder and the Wisla.

#### Long-Term Project

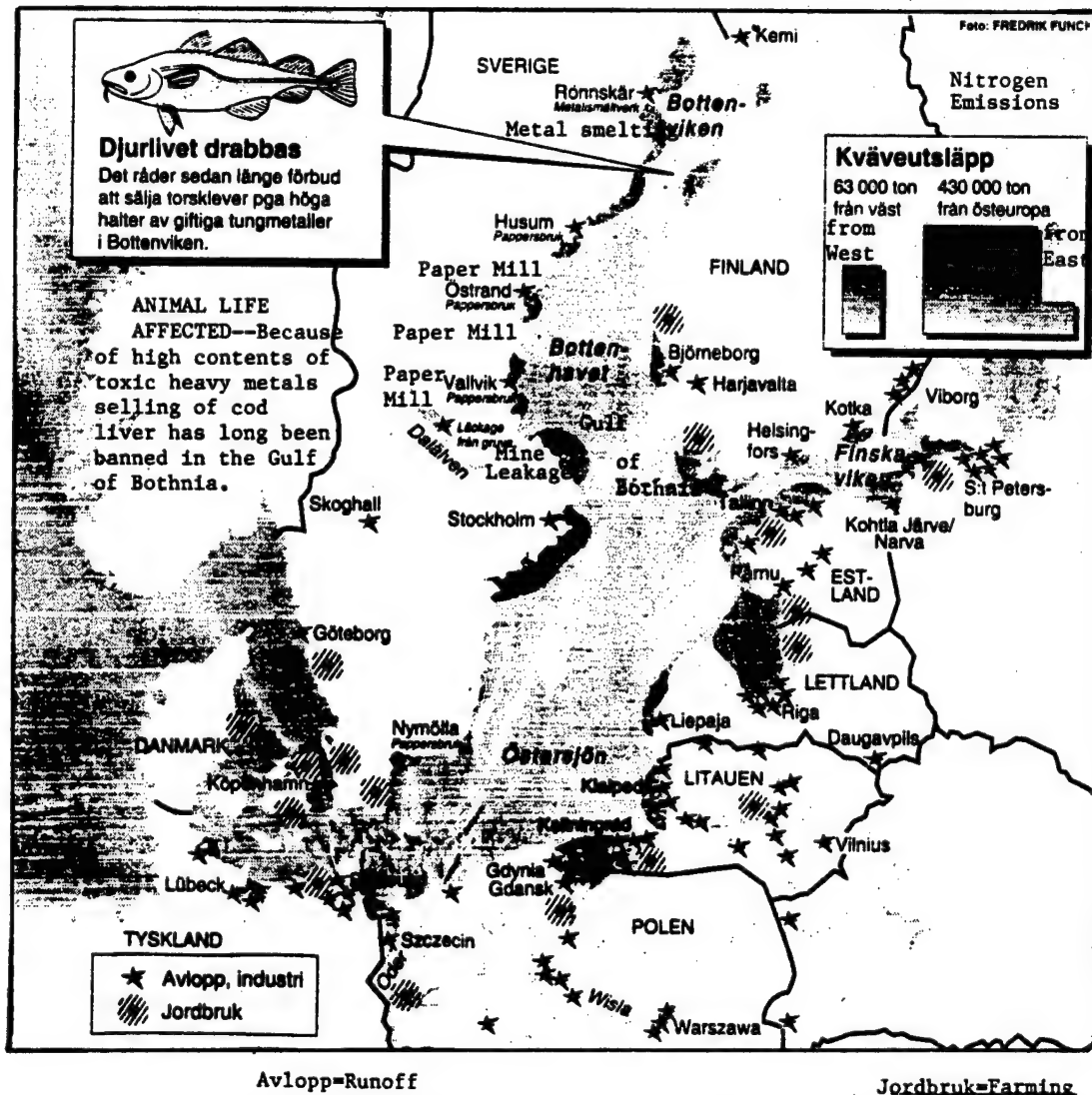
The cost of building waste treatment and manure processing plants, and for reforming agriculture is a dizzying 130 billion kronor. It is estimated that the work will take 20 years.

The environmental costs of automobile traffic is not included, even though traffic accounts for a significant portion of the nitrogen emissions that end up in the Baltic. (And there are plans for the Via Baltic, a motorway extending from Germany in the west to Finland in the east.)

"The Baltic Sea must not collapse. Already there are long coastal stretches in the Baltic that are affected and where fish lay no eggs. But even if the pollution diminishes, it will cost millions for restoration," said Ulla-Britt Falenius, departmental director of the National Environmental Protection Board and the Swedish representative on the task force for the Baltic.

#### Demanding Environment

The Baltic Sea pants for oxygen. All of the environmental poisons aside, it is an inland sea which fosters, for reasons that are naturally occurring, harsh ecological conditions. The salt content is low because the opening to the North Sea is small. In addition, 200 freshwater rivers flow into the Baltic Sea, bringing with them large amounts of waste products from the land.



The Baltic Sea's plant and animal life originate either from the fresh or the saltwater milieu and exist on the extreme edge of their capacity in the brackish water. Furthermore, it is a shallow sea compared with the Mediterranean, for example. This means that there are no large volumes of water for mixing its diverse elements.

The naturally occurring oxygen deficiency is further aggravated by the tons of fertilizer substances which flow from all the rivers, fields, rain, and air.

Old and new offenses, such as the release of chlorine and metallic wastes from pulp mills, runoff from factory farms, and the lack of sewage treatment plants in the former East Europe have combined to turn the Baltic Sea into a slowly dying sea.

The clarity of the water has diminished, the bladder wrack is on the verge of disappearing while the green slick takes over. Cod has all but vanished because it cannot reproduce in the oxygen-deprived sea.

Fully 100,000 square kilometers, or a quarter of the Baltic's bottom is dead and covered with hydrogen sulfide.

Yet the Baltic has given evidence of a good potential for recovery. Environmental poisons—PCB's, DDT, lead, cadmium, and mercury—are diminishing thanks to bans on production, or at least, is employed in very restricted amounts. Mercury in the plumage of the guillemot has dropped to a level equivalent to the end of the 19th century.

The Baltic is divided into 10 basins from the top of the Gulf of Bothnia to Skagerrak.

Generally speaking, chlorine and metallic wastes are the biggest problem in the Gulf of Bothnia, whereas agricultural runoff is the main problem in the Gulf of Finland, the Gulf of Riga, the Oresund, the Kattegat, and Skagerrak.

## GERMANY

### BMFT Funds Study on Advantages Offered by Solar Energy

92MI0654A Bonn BMFT JOURNAL in German Jun 92 p 12

[Text] Solar power stations could significantly assist in the protection of the environment and climate in countries located in southern climatic zones, according to a BMFT-commissioned investigation into the potential for using solar power stations in the Mediterranean region.

By 2005, solar plant capacity in the range of 3,500 to 13,500 MW (depending on energy policies) could be achieved in economically viable conditions in 16 Mediterranean countries, substituting 4 to 15 percent of the additional oil- and gas-powered plants which would otherwise be needed. On a longer term, to around 2025, solar power stations could bring about a significant reduction in CO<sub>2</sub> emissions in this growing economic region. Every MW of solar power substitutes 2,000 tonnes of CO<sub>2</sub> emissions per year, so that a combination of efficient fossil-fuel power stations and expansion of solar power stations to a total of 23,000 MW by 2025 could at least stabilize emissions at present levels.

CO<sub>2</sub> emissions, currently totaling around 380 million tonnes annually, could be reduced by up to 35 percent through a forced expansion of solar power in the next century of up to 33 percent (63,000 MW) of the expected potential market of 190,000 MW for new power stations.

Such an expansion of solar power would mean a market of between 15 and 60 billion German marks [DM] by 2005, and of DM 90 billion to DM220 billion by 2005 to 2025.

A start must be made as soon as possible to extending solar power if it is to achieve this contribution to energy savings and protecting the environment by 2005. The first step could be to commission 300 MW solar power farms of the type trialed in California, using groove collectors in combination with supplementary oil or gas power.

Solar power stations with outputs in the range of 50kw-100 MW could be ready for commercial use within a decade. According to the study, however, expanding their industrial production can only be justified economically if the first projects in the Mediterranean region are implemented as soon as possible, with developed countries giving the financial support of which only they are capable.

### Government Measures Against Ozone Depletion Outlined

92MI0653A Bonn BMFT JOURNAL in German Jun 92 p 15

[Text] Measures taken by the federal government to prevent depletion of the ozone layer were described by the Parliamentary State Secretary to the Federal Minister for Research and Technology, Bernd Neumann, in conjunction with the Federal Minister for the Environment, Conservation, and Reactor Safety, in response to a question from Bundestag members and the SPD [Social Democratic Party of Germany] parliamentary group. State Secretary Neumann pointed out that 9 million German marks [DM] were available during 1992 under the ozone research program, providing funding for such projects as surveys to investigate stratospheric ozone depletion, especially over the Arctic, associated processes, laboratory experiments and modeling.

Between 1990 and 1994 the BMFT [Federal Ministry of Research and Technology] is also contributing a total of DM3 million towards TRANSALL, equipped by the federal armed forces to carry out survey flights. The ozone research program will shortly also include a new component, "Measurement of UV-B Radiation," in order to obtain reliable data on intensity of UV-B on the earth's surface.

The Federal Environmental Minister is negotiating with manufacturers and users of fluorocarbons to phase these out by the end of 1993 if possible, so as to prevent further depletion of the stratospheric ozone layer. The federal government considers that, if such phasing out is to be achieved before the deadline of 1 January 1995 fixed for the halon fluorocarbon order, then it is essential for the appropriate national authorities to act swiftly to approve production facilities for fluorocarbon substitutes. On an international level, both within the EC and at the fourth conference of signatories to the Montreal Protocol to be held in November 1992 in Copenhagen, it is essential for previous measures to be intensified, through:

- Bringing forward to the mid-1990s the phasing out of substances covered under the Montreal Protocol;
- Phasing out the so called transitional substances (hydrofluorocarbons) by the beginning of the next century;
- Limiting overall use of hydrofluorocarbons;
- Restricting hydrofluorocarbons to specific areas of use.

In order to assess the increasing role of air transport in depleting the ozone layer, the BMFT is to fund a joint project, "Pollutants in Air Transport," proposed by the German Aerospace Research Agency and involving not only large-scale research establishments but also aerospace companies, the TUV [Rhineland Technical Monitoring Agency], universities and other research institutes.



## **Record-Range Environment Research Aircraft To Be Built**

92MI0633A Bonn DIE WELT in German 4 Jul 92 p 9

[Article by Anatol Johansen: "A New German High-Altitude Plane Beats Legendary American Long-Distance Reconnaissance Plane—Strato 2C Set To Break Airplane Records From 1995"]

[Text] There has never yet been an airplane capable of flying for up to 50 hours without refuelling, at a height of 24 kilometers. Such a plane is now to be built, on the orders of Federal Research Minister Heinz Riesenhuber: Its uses will include atmospheric research into the ozone layer.

The 80.4 million German marks [DM] contract for this superplane has been awarded to Grob, a company based in the southern German town of Mindelheim enjoying a longstanding worldwide reputation for light aircraft, particularly gliders. Grob, with previous production totalling over 3,000 planes, intends to use state-of-the-art technology to achieve the exceptional performance expected on the new Strato 2C.

Firstly, the plane's weight has to be extremely light, despite its exceptional dimensions: its 56.6 meter wingspan is similar to that of a Boeing 747 jumbo jet. Yet, without fuel and useful load, the plane weighs only 5.8 tonnes, compared with a fully-laden jumbo's takeoff weight of 180 tonnes.

This extremely light weight is made possible by the use of fiber composites, which combine extreme lightness with great strength and bearing capacity. Grob is taking the technology of glass fiber, carbon fiber and aramide fiber reinforced plastics, developed for high-performance gliders, power gliders and the Strato 1 research plane, a logical step further; in addition to their light structure, such materials have the advantage over metal of being non-corrosive and almost free of material fatigue.

Special qualities were also required for the aircraft's engines. For a number of reasons, including the extreme light weight and minimum possible fuel consumption required, propeller engines were essential. Unfortunately, normal turboprop engines have a great disadvantage, as their performance falls off rapidly at higher altitudes.

For this reason, the Strato 2C's two piston engines, each of which produces only 300 Kw (around 400 HP), are equipped with both a turbo-supercharger and a reducing gear system, enabling heights of up to 24 kilometers to be reached with constant engine power.

The two pilots and two scientists comprising the Strato 2C's crew will not suffer from the extremely high altitudes. Unlike other high-altitude research planes, they will not be crammed into uncomfortable pressure suits, as the plane has a relatively spacious pressurized cabin, providing a sizeable high-altitude working environment. Besides atmospheric research, the Strato 2C can also be

used for monitoring large-scale air and water pollution, remote observation of the earth's surface, for example in searching for hitherto undetected raw materials or freshwater supplies, or monitoring pest incidence in fields and forests, and even for air safety functions over the North Atlantic or warning ships of ice. The plane's maiden flight is scheduled for 1995, from the German Aerospace Research [DLR] Agency's airfield at Oberpfaffenhofen, near Munich.

## **Negative Implications of NAFTA Agreement Viewed**

AU1109104392 Duesseldorf HANDELSBLATT  
in German 11-12 Sep 92 p 2

[Dietrich Zwaetz article: "Bureaucratic Utopia"]

[Text] NAFTA is an expression of U.S. concerns about competitors. It is still an unfinished treaty, a sort of bureaucratic utopia that was precipitously brought to light by George Bush in the interests of his election campaign. The text of the "North American Free Trade Agreement" that was negotiated between the United States, Canada, and Mexico comprises more than 2,000 pages, and it is hardly conceivable that under the hands of legal and fiscal experts it will shrink to a volume comprehensible and readable for the ordinary citizen.

The Europeans have been familiar with meticulous, precise, bureaucratic trade provisions since 1958. The Americans, however, are unfamiliar with such provisions. In the 1988 trade agreement between the United States and Canada, the passages on the "local content" of a product filled no more than 28 pages. To define the North American marks of origin in the NAFTA agreement, the negotiators filled 193 pages, which took them 14 months.

It is known that the three great car producers in Detroit do not consider a North American content of 62.5 percent of vehicles that can be imported duty-free within the NAFTA area sufficient to protect them from Japanese vehicles.

## **Danger Posed by New Protectionism**

In view of the escalating election campaign in the United States, it is not surprising that the Bush administration cannot dispel concerns about the loss of jobs in the United States, which will be transferred to Mexico as a low-wage country. The Democrats, who along with the trade unions do not like NAFTA anyway, will use every opportunity to interpret the agreement as disadvantageous to U.S. business and industry.

The NAFTA accords—to the extent that they are clearly defined—have indeed useful bases to promote growth within a free trade area. What is dangerous, however—but has, of course, not been particularly pointed out by the opponents in the United States and Canada—is the fact that the NAFTA area could really develop into an



island of protectionism and could thereby contribute toward the undermining of free world trade that is based on the GATT principles.

#### **Mrs. Hills' Dual Mandate**

U.S. Trade Representative and negotiator Carla Hills is certainly not a protectionist by conviction. However, it is her political mandate, on the one hand, to protect her country's farmers, and, on the other, to open up new markets for the export sector without competition from third countries. Neither of the two goals can be achieved without a bit of protectionism.

Mrs. Hills' statements before the U.S. Congress, which Bush must win over for ratification, are revealing. In goods exchange with Mexico, the United States produces a surplus of \$7 billion every year. If Mexico has to open its borders, the country, which economically is the weakest partner among the three NAFTA founders, will have to contribute an even larger share to the recovery of the U.S. trade balance.

In addition, despite U.S. assurances that environmental achievements will not be sacrificed to the NAFTA agreement, environmental polluters along the U.S.- Mexican border will not be punished. They can exploit the more lax Mexican ecological understanding to blow their pollutants and poisonous substances over Rio Grande to the United States. George Bush and Carla Hills will have to work hard to persuade Congress and the public to make NAFTA politically acceptable by the spring of 1993.

### **NORWAY**

#### **Norway Views Environmental Threats From Russia's Nuclear Waste**

PM0909153692 Oslo AFTENPOSTEN in Norwegian  
3 Sep 92 p 13

[Ole Mathismoen article: "The Catastrophe Is Already Taking Place"]

[Text] Before the collapse of the Soviet Union the West had a nightmare about the dumping and dangerous storage of atomic waste. Now a reality is being revealed that makes Chernobyl look like a picnic.

Environment Ministry Under Secretary Jan Thompson has no doubts: "This is definitely one of the biggest environmental threats to Norway."

At present a very special research voyage is taking place in the Barents Sea and the Kara Sea. Norwegian and Russian researchers are there to measure radioactivity in areas which were once hermetically sealed to the West. The world is waiting tensely for the results. For decades solid and liquid radioactive waste was dumped and 120 nuclear bombs were tested on Novaya Zemlya, which separates the two seas. Enormous quantities of radioactive waste has been stored on the mainland.

The question the researchers want an answer to is whether there is more radioactivity in the sea than natural background levels, and whether one of the world's cleanest and most fish-rich seas could find itself in danger in the future. The voyage is the first attempt to tackle a gigantic problem which the Bellona Environmental Foundation in collaboration with Russian researchers has begun to shed light.

After a series of visits to areas that were previously closed Bellona has turned the spotlight on an incredibly big and frightening radioactive garbage heap. Together with several nuclear power stations in poor condition this nuclear waste represents a threat which one day could deal Norway a deadly blow.

Bellona's Frederic Hauge has visited Mayak, and is working full-time on the Russian nuclear threat in the north:

"I dare not think about how big a threat this actually is," he said.

The military nuclear complex at Chelyabinsk in the southern Urals is undoubtedly the biggest threat, even though the distance to Norway is great. In terms of radioactivity almost one quarter of Russia's nuclear waste is stored here. Leaks or accidents here would bring radioactive water via the River Checha to the River Ob and out into the Kara Sea which is the feeding ground of the cod in the Barents Sea.

—Some 188 Russian naval vessels in the Northern Fleet are powered by 229 nuclear reactors and sail northern waters. Officially all waste is stored on land by the Litsa Fjord, 40 km from Finnmark. But liquid waste of low radioactivity is still being dumped from special ships in the Barents Sea. The Northern Fleet and the missile bases in the regions have around 3,500 nuclear warheads stockpiled.

—In April 1989 the nuclear submarine Komsomolets sank off Bjornoya. The partially shattered submarine lies at a depth of 1,680 meters and contains radioactivity corresponding to 10 percent of that released at Chernobyl, and two nuclear charges of plutonium.

—In the Murmansk Fjord several dozen old nuclear submarines are lying rusting. Their nuclear reactors have not been removed.

—On Novaya Zemlya 120 nuclear bombs have been detonated since 1957—86 in the atmosphere and the rest underground. Russia's self-imposed moratorium on nuclear tests runs out in October. In Russia consideration is being given to whether 5,000 nuclear warheads that are now surplus to requirements since the disarmament agreements should be destroyed in nuclear explosions. The last test took place on 24 October 1990 and radioactive gases were detected in Sweden.

—From 1963 to 1986 radioactive waste was continually dumped in the Kara Sea from the special ship, the

Lepse. A total of 11,200 containers containing 0.5 to 1 cubic meter of waste are believed to have been dumped. In the 1960's a boat fully loaded with nuclear waste was sunk and waste from a fire on the nuclear icebreaker Lenin was dumped directly into the Kara Sea.

- Cooling water containing a low level of radioactivity is still being dumped in the Barents Sea from the special ships Sebyanka and Amor which collect waste from the submarines.
- Waste of both high and low radioactivity is stored at a number of locations on land on the Kola Peninsula, which has the world's highest concentration of nuclear reactors. In Murmansk harbor there are four old ships fully loaded with radioactive waste. There are plans for a new central store for all nuclear waste on the Kola Peninsula.
- The nuclear power station at Polyarnyye Zori on the Kola Peninsula has four reactors of the Greifswald type and has had several operational problems. Its waste is packed into steel barrels lined with concrete and is stored in sheds.
- Radioactive waste from hospitals and civilian industry on the Kola Peninsula is stored 43 km from Murmansk on the road to Norway. The waste is packed in plastic and stored in concrete enclosures that are poorly protected.

There are also enormous waste dumps near the city of Tomsk on the River Ob. The waste products from plutonium production in Mayak are deadly, and the production of plutonium from used fuel rods is continuing at the plant. In the 1950's and 1960's waste was dumped directly in the rivers. An accidental explosion in 1957 caused the spread of radiation corresponding to ten Chernobyls, and radioactive dust from the swampy Lake Karachay was stirred up and spread in the area. Radioactive waste is still being dumped in the enclosed Lake Karachay and radioactivity is spreading through the groundwater at the rate of 80 meters per year and coming dangerously close to the Ob river system. Karachay contains radioactivity equivalent to 500 Chernobyls. The lake's plutonium content is particularly worrying.

At Mayak an artificial lake containing 400 million cubic meters of radioactive water has been created. The containing walls are in poor condition, the water is rising, and there are fears that there will be leaks from the reservoirs out into the river system. Also over 100 tanks are being stored. These contain several thousand cubic meters of highly radioactive waste which requires constant cooling to prevent explosion.

In the first instance the Mayak threat is a threat to a local population which has long topped the cancer league. But without large-scale and expensive safety measures Mayak could become a gigantic problem for Norway.

## SWEDEN

### Environment Legislation Halted Until EC Entry

92WE0662Z Stockholm DAGENS NYHETER  
in Swedish 21 Aug 92 p 10

[Article by Erika Bjerstrom: "EEA Stops Environmental Reforms"]

[Text] There will be a complete halt to reforms in the field of Swedish environmental policy when the EEA [European Economic Area] agreement takes effect after the turn of the year. It will be two years before environmental laws can be made more stringent. This was confirmed by the National Environment Protection Board's EC expert during questioning in the Riksdag yesterday.

The Riksdag's EEA Committee had called Kris Mortensen, head of division and EC expert at the National Environment Protection Board, and Per Rossander of the Greenpeace environmental organization. Following brief introductory remarks by each of them, the committee members asked questions about the EEA agreement and environmental policy.

The announcement concerning a temporary halt to reforms came after a question asked by Gudrun Schyman of the Left Party. She wondered if Sweden would be able to make independent environmental decisions after the agreement went into effect.

"After the EEA agreement takes effect, Sweden will not be able to make its own environmental laws or change the laws it has," Kris Mortensen answered.

#### Halt to Reforms

"For example, we will not be able to adopt a plan for phasing out Freon more quickly or decide to phase out certain chloride compounds," she explained. The halt to reforms will last until 1995 or the date on which Sweden begins regular negotiations regarding membership in the EC.

If the Riksdag approves, the EEA agreement will take effect after the end of the year. During the negotiations, Sweden received permission to retain a number of stricter environmental rules that are unique to Sweden. But now Sweden will have to hold off on new rules until the time comes for the next round of negotiations.

Several members were concerned about whether Sweden would be able to put its stricter environmental rules across during the EC membership negotiations in 1995.

Kris Mortensen said she thought the problem could be solved through negotiation. Greenpeace doubted that the EC would have caught up with Sweden in the area of environmental legislation. If not, Sweden would be forced to allow dangerous substances that are now banned.

**Hard To Predict**

But neither Greenpeace nor the National Environment Protection Board would come right out and praise or criticize the EEA agreement for its effects in the environmental area.

"The crucial question is the extent to which traffic and energy consumption will increase when the inner market becomes a fact. That is when we will find out how negative the environmental effects may be," said Kris Mortensen.

Nic Gronvall (Moderate Party) read aloud the section in the EEA agreement's chapter on the environment which states that the countries pledge to protect people's health, halt environmental destruction at the source, and so on, and asked:

**'Straitjacket'**

"What's wrong with that?"

"Wording like that is more the rule than the exception in international agreements. The problem is that fine words about the environment will be ignored when the agreement is being implemented and the ambition is to have free trade across borders," answered Per Rossander.

He warned that the EEA agreement could become a straitjacket as far as environmental policy is concerned.

"Environmental issues require international cooperation. But it is equally important that individual countries have the right to adopt their own measures without being subjected to the EEA agreement's straitjacket."

Greenpeace and the National Environment Protection Board both agreed that Sweden will have less influence under the EEA agreement than it will as a member of the EC.

Not until it becomes a member will Sweden be entitled to invoke clauses giving it the right to special solutions in the environmental area and have a chance to make proposals of its own that might influence the environmental policy of the EC as a whole.

**EC Commission Letter Seen Blocking Freon Ban**

92WE0662B Stockholm DAGENS NYHETER  
in Swedish 21 Aug 92 p 10

[Article by Erika Bjerstrom: "Freon Ban Stopped by EC"]

[Text] The EC Commission does not accept the Swedish Riksdag's ban on products containing Freon, the

substance that destroys the ozone layer. This was announced in a letter to the Swedish Board of Commerce that the National Environment Protection Board learned of on Wednesday [19 Aug].

The announcement aroused strong reactions at the National Environment Protection Board. The EC Commission had previously agreed that Sweden could phase out Freon more quickly than the EC.

"I don't understand what they mean. If they have agreed that we can phase out Freon more quickly, the consequence must be that we can also ban products," says Kris Mortensen, head of division at the National Environment Protection Board.

In its letter, the EC Commission says that it is one thing to allow a faster phasing-out plan, but something entirely different to allow Sweden to ban imports of merchandise containing Freon.

"That is a very bureaucratic argument," says Kris Mortensen.

The National Environment Protection Board has forwarded the letter to the Ministry of Foreign Affairs for evaluation.

This is the first time that the EC Commission has objected to an environmental decision already made by the Swedish Riksdag. It has happened, however, that the EC Commission has objected when Sweden has notified the EC of planned environmental decisions.

**Five Nuclear Reactors Shut Down Due To Cooling System Problems**

LD1709222892 Stockholm Sveriges Radio Network  
in Swedish 1030 GMT 17 Sep 92

[Text] Five Swedish nuclear reactors have such serious deficiencies that they have been shut down. The Nuclear Power Inspectorate [SKI] has banned the power companies from starting up the reactors before the faults have been seen to. Hitherto unknown serious deficiencies in the emergency cooling system have led to the intervention by the SKI. Barsebaeck's number one reactor was shut down rapidly at the end of July after a fault occurred in the cooling of the reactor core. Since then, the other four Swedish reactors with the same type of cooling system have been shut down. They are Ringhals-1, Oskarshamn-1, Oskarshamn-2, and Barsebaeck-2.

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